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Paper TRADE JOURNAL

REG. U. S. PAT. OFF.

VOLUME 124, No. 21 MAY 22, 194

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THACKERAY

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75th ANNIVERSARY

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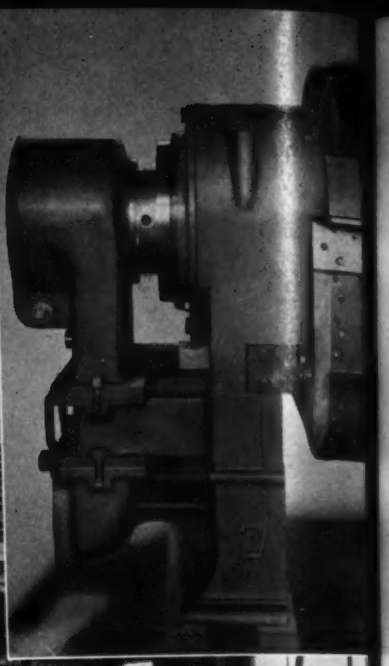

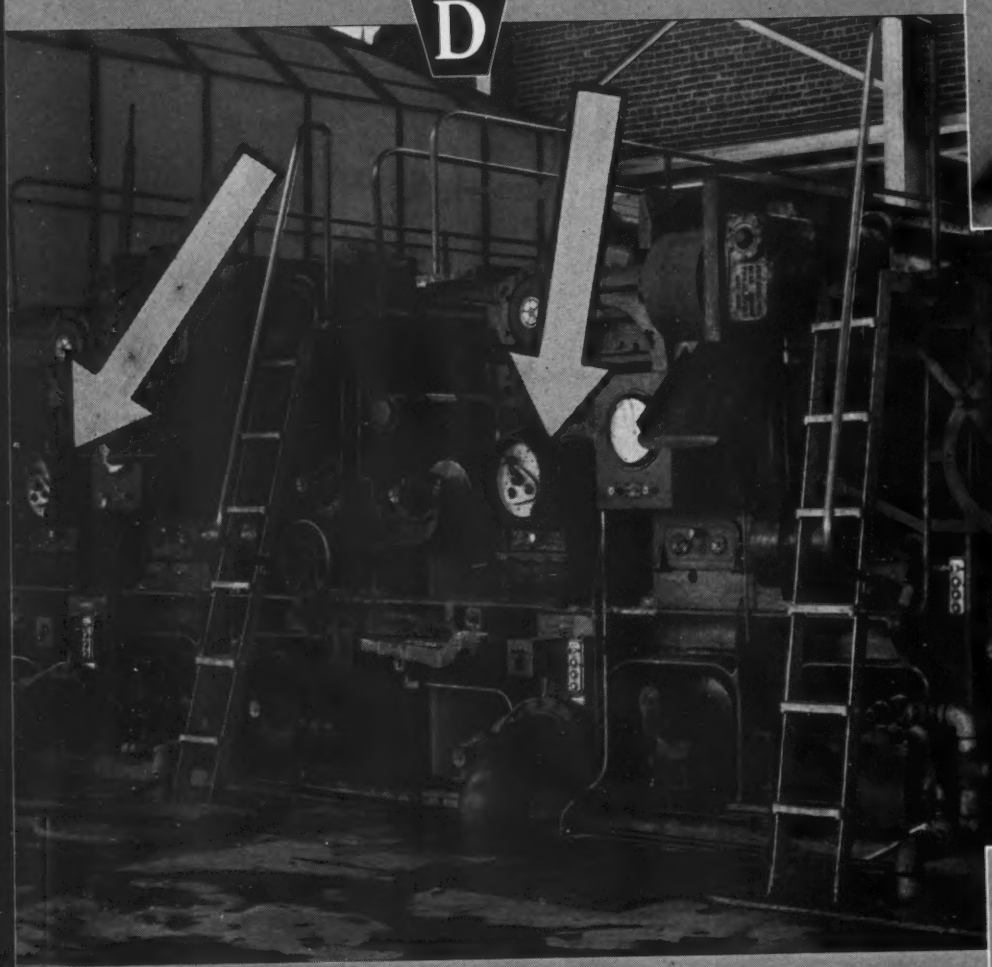

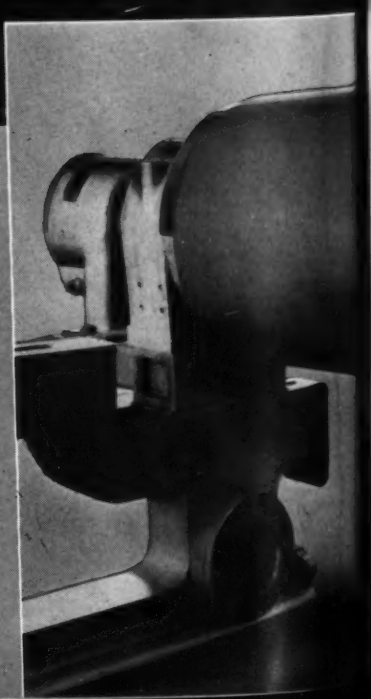

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DOWNINGTOWN
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IN THIS ISSUE

MAY 22, 1947

Southland Mills Would Buy National Forest for Pulp 7
Midwest Dealers Shade Waste Prices 7
Institute Stages Annual Conference 7
Northern New Yorkers Elect McRorie 8
Cullen Interprets International Policies 10
Pacific Mills Aims at New Safety Mark 10
SAPEYES Hear of Pressure on Printing 12
FINANCE 14
Seek Standards for Frozen Food Pack 18
Syracuse Offers 24 Fellowships 18
Flambeau Mill Joins Trees for Tomorrow 18
Newsprint Use Rose 16 Per Cent in April 21
IMPORTS 22
TRENDS 29
PRICES 30
MARKETS 31
PRODUCTION RATIO REPORT 32
EDITORIAL 33
CLASSIFIED ADVERTISING 50

Technical Section ("TAPPI")

Preservation of Straw in Ricks 35
TAPPI Notes 37
Chlorite Bleaching of Southern Pine Kraft Pulp 38
Kalamazoo Valley TAPPI Discusses Pumps 40
New TAPPI Members 40
Scandinavian Research Organizations 41
TAPPI Asheville Dates Changed 46
Injection Molding of Plastics 46

PAPER TRADE JOURNAL IS INDEXED IN INDUSTRIAL ARTS INDEX

INDEX TO ADVERTISERS ON PAGE 64

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Paper TRADE JOURNAL

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CALENDAR OF COMING EVENTS

May 22-24, 1947—American Pulp and Paper Mill Superintendents Association. Annual Convention, Edgewater Beach Hotel, Chicago.

June 11-13, 1947—Canadian Pulp and Paper Association, Technical Section, Summmer Meeting. Hotel Algonquin, St. Andrews-by-the-Sea, N. B.

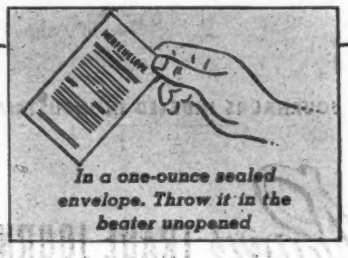
June 16-17, 1947—American Society for Testing Materials, Annual Meeting, Chalfonte-Haddon Hotel, Atlantic City, N. J.

June 20-21, 1947—Paper and Twine Association, Annual Meeting, French Lick Springs Hotel, French Lick Springs, Ind.

October 27-29, 1947—The National Paper Trade Association of the U. S., Inc., Semi-annual Convention, Hotel Sherman, Chicago.

Merfenelopes

FOR SLIME CONTROL



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Paper TRADE JOURNAL
REG. U. S. PAT. OFF.
VOL. 124, NO. 21 MAY 22, 1947

Institute Stages Its Annual Conference

APPLETON, Wis. — The eleventh annual executives conference of the Institute of Paper Chemistry was being held here Thursday and Friday, May 22 and 23, with Sidney D. Kirkpatrick, chemical engineer and editor, as the principal speaker. The executive board of the Institute, which is headed by Ernst Mahler, Neenah, as president, met Wednesday evening, May 14. Mr. Mahler is executive vice-president of Kimberly-Clark Corporation.

Mr. Kirkpatrick's topic will be "International, Political and Industrial Aspects of Atomic Energy." He has been engaged in research for many years and is the author of a number of technical works.

The meeting was attended by executives of paper mills and associated industries from all parts of the United States. It opened with a luncheon at 12:15 Thursday afternoon at the North Shore Golf Club and was followed by a symposium on "Men and Industry," with J. L. Riegel, New York City, a member of the board of trustees, presiding.

The speakers were Folke Becker, president of the Rhinelander Paper Company, Rhinelander, Wis., "The Need"; J. E. Todd, of the Institute, "The Selection"; Dr. H. F. Lewis, of the Institute, "The Training"; and P. C. Baldwin, of the Scott Paper Company, Chester, Pa., "The Use."

The dinner at which Mr. Kirkpatrick will speak will be held at North Shore Thursday evening. Mr. Mahler will preside.

R. B. Robertson, Sr., of the Champion Paper and Fibre Company, Canton, N. C., a trustee, will preside over Friday's talks. Speakers will be men from the Institute, including L. V. Forman, "The Semi-Commercial Plant"; C. B. Sitterson, "The Trend Toward Group Research"; R. E. Shallcross, "The Business of Research."

John G. Strange, secretary of the Institute, will give a report on finances, and Westbrooke Steele, director, will give his annual report of the Institute's progress.

C. W. Oomes, United States Commissioner of Patents, will speak after a luncheon Friday noon at the North Shore Golf Club. The conference will be adjourned Friday afternoon, but a buffet luncheon will be held in the evening at North Shore.

Southland Mills Would Buy National Forest for Pulp

Midwest Dealers Shade Waste Buying Prices

CHICAGO—With the local paper trade showing little change, though the slight increase in imports in March caused some betterment of feeling, major interest was confined to the waste paper market. This week a reduction of $2 a ton in dealers' paying prices was announced in this area. No change was reported in the mill buying prices where No. 1 mixed remained at $18 a ton, No. 1 news at $20 and No. 1 corrugated at $30. However, the dealers were said to have brought their paying prices down to 40 cents a hundredweight for miscellaneous mixed paper, 50 cents for folded news and 80 to 90 cents for books and magazines. Other dealers' items were steady at 90 cents to $1 a hundredweight for old containers, $1.75 to $2 for brown kraft, $2 to $2.25 for white news blanks and $3 to $3.50 for hard white shavings.

It was reported here from reliable sources that these reductions came about as dealers attempted to slow the movement of waste paper which, in the recent past, has been sufficiently heavy to cause the market grave concern.

St. Regis Names Simonton Manager at Oswego

OSWEGO, N. Y.—Budd E. Simonton has been appointed manager of the Oswego Multiwall Paper Bag Plant of the St. Regis Paper Company, by Willard E. Hahn, general manager of bag production. Mr. Simonton has been with St. Regis since 1945 when he became manager of the Watertown bag plant. Prior to joining St. Regis he was associated with several bag manufacturers including Southern Advance Bag and Paper Company and Union Bag and Paper Corporation.

As manager at Oswego, Mr. Simonton succeeds Theron Contryman, who held the position for 18 years. Mr. Contryman, who is now on a four-month leave of absence because of ill health, is expected to rejoin St. Regis in a new capacity which will take full advantage of his extensive experience in modern paper bag manufacturing methods.

LUFKIN, Tex. — Richard Wortham, Jr., vice-president of the Southland Paper Mills, Inc., here, appeared before the House newsprint committee late last week in Washington and requested the latter to consider legislation to permit his company to buy the Davy Crockett National Forest, or grant cutting rights on both the Davy Crockett and Angelina National Forests.

Mr. Wortham testified that Southland Paper Mills could produce an additional 60,000 tons of newsprint annually if it could obtain this timberland. Under an existing law the National Forest Service can operate on a cooperative basis with private business.

The Southland Paper Mills propose to pay $10 per thousand for the saw timber in the David Crockett Forest plus $1 a cord for the estimated pulpwood and pay for the land on the same appraisal which the United States Forest Service used when it purchased the land in 1934.

"The Southland Paper Mills now own 112,000 acres of timberlands," Mr. Wortham said. He told the committee members, who include Representative Lindley Beckworth, of Gladewater, that his plant will start operation of a second machine in December.

The National Park Service submitted a statement opposing Mr. Wortham's suggestion. The recreational, scientific and watershed value of the forest is greater than any commercial utilization, the statement said.

Speaking for the Leesville-Vernon Parish Chamber of Commerce, Leesville, La., E. A. Charlton, of New York, said:

"If half the forest lands of Texas alone followed the planting practices of the United States Forest Service, enough pulpwood would be produced to service the entire 1947 needs of the entire South."

According to Washington dispatches, Mr. Charlton referred to current suggestions that Alaskan forests be developed to produce paper and pulpwood and said surveys show there would be a production cost differential of "conservatively $10 per ton in favor of the South."

(Continued on page 24)

Northern New Yorkers Elect Henry McRorie

WATERTOWN, N. Y. — Henry McRorie, traffic manager of the St. Regis Paper Company, was elected president of the Northern New York Paper Group at the annual meeting held at the Hotel Woodruff. The other new officers consist of E. V. Deans of the Racquette River Paper Company, Potsdam, vice-president; Albert W. Horr, of the Brownville Paper Company, treasurer; M. C. Goodison, secretary.

The executive committee is composed of the officers and the following: Willard S. Gamble, of the Brownville Board Company; A. F. Owen, of the Latex Fibre Industries, Inc., of Beaver Falls; Charles S. Hirschey, of the Climax Manufacturing Company, of Castorland; Frank Gutman, of the Racquette River Paper Company; James C. McCormick, of the Knowlton Brothers, Inc., city; W. F. O'Brien of the J. P. Lewis Company, Beaver Falls.

This group which handles pooled shipments of less-carload lots for the several mills in this area reports a large increase in 1946 shipments over those of 1945.

The paper mills represented in these shipments are: Brownville Paper Company and Brownville Board Company, of Brownville; Knowlton Brothers, Inc., city; Climax Manufacturing Company, of Castorland; Latex Fibre Industries, Inc., and the J. P. Lewis Company, Inc., of Beaver Falls; the Racquette River Paper Company, Inc., of Potsdam and the Watertown, Herrings, Carthage and Oswego mills of the Taggart Corporation, and the Deferiet, Harrisville and Norfolk mills of the St. Regis Paper Company.

Imperial Celebrates McBride Anniversary

HUDSON FALLS, N. Y.—Karl R. McBride, president of the Imperial Paper and Color Corporation, was presented with a gold watch and chain by the board of directors in honor of his 40th anniversary with the firm. The presentation was made by Martin L. C. Wilmarth, who called attention to the fact that Mr. McBride was the founder of the color works division and that its success was mainly due to his efforts.

From the status of being sole employe of the color division, Mr. McBride has advanced steadily to the presidency. He was elected to that post on March 31, 1931, and has held it continuously since.

Ross Names Morsch to Los Angeles Post

LOS ANGELES — Richard W. Morsch has been named manager of the J. O. Ross Engineering Corporation office. For the past ten years he has made his headquarters at the New York offices of the firm. He succeeds W. A. Schoenbeck who is returning to the New York office.

Mr. Morsch is a graduate of the University of Colorado and joined the Ross organization in 1937 as a specialist in heat treating of magnesium and aluminum. With headquarters in Los Angeles, he will direct all sales and engineering in connection with the firm's varied line of air processing systems in the Pacific Coast territory.

THEIR DUTIES ENLARGED

H. H. WILLIAMS

C. H. VICKERY

Cohoes Local Elects Radcliff

COHOES, N. Y. — Earl Radcliff was elected president of the Cohoes local of the International Brotherhood of Papermakers at a recent meeting. Other officers elected include Fred Beyer, vice-president; Arthur Marland, treasurer; and William Morris, secretary. A new wage and working contract extending two years was recently signed and no further activities are planned until late in the summer. Virtually all members of the local are affiliated with the Cohoes Envelope Co.

Jones Firm Advances Williams and Vickery

PITTSFIELD, Mass. — Appointment of Henry H. Williams as executive vice-president and Charles H. Vickery as sales manager of E. D. Jones & Sons Company, manufacturers of paper-making machinery, was reported last week by S. H. Jones, president of the company. Mr. Williams has served as vice-president in charge of sales for the past eight years; Mr. Vickery, as sales engineer.

Mr. Williams became associated with E. D. Jones & Sons Co. in 1910 and was engaged successively in payroll work, cost accounting, as purchasing agent and in production work as a shop supervisor. About 20 years ago, he entered sales work. He was named assistant treasurer in 1928 and served in that capacity until 1938 when he was appointed vice-president in charge of sales. He has been a director of the company for 15 years.

Mr. Vickery attended the Clarkson College of Technology. He became a draftsman with E. D. Jones in January 1929 and a year later was promoted to salesman, covering northeastern United States and eastern Canada. Recently his territory has included the Pacific Coast.

A new pulping machine developed by E. D. Jones & Sons will be given a name by some mill executive, operator, or employee who enters the contest sponsored by the manufacturer. A cash award of $500 will be given the winner. Contest closes July 15, 1947. This new pulping machine has been in successful mill operation for about two years.

Improvement Group Reelects Mead and Everest

WAUSAU, Wis. — George W. Mead, Wisconsin Rapids, president of the Consolidated Water Power and Paper Company, was reelected president of the Wisconsin Valley Improvement Company at its annual meeting here. D. C. Everest, chairman of Marathon Corporation, Wausau, was renamed vice-president.

M. W. Kyler, general manager of the Improvement Company, reported reservoirs on the upper Wisconsin river 84 percent full, with good prospects of filling them to capacity.

No action was taken at the meeting regarding construction of the George Mead reservoir in the Little Eau Pleine Valley, as several townships in the area in which the reservoir is to be located have not agreed to the relocation or abandonment of highways that the proposed flowage would cover.

Elton Sails for England

John A. Elton, manager of the Foreign Sales Department of Brown Company, producers of pulp, paper and allied products, left on May 15th for England and Europe.

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FOOD WRAPPINGS

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- LIQUID CHLORINE
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ALKALI

DIAMOND ALKALI COMPANY

PITTSBURGH 22, PA., *and Everywhere*

Cullen Interprets International Policies

NEW YORK — Stockholders of the International Paper Company, at their annual meeting last week were presented with a heartening outline of the company's progress and its policies by R. J. Cullen, chairman of the corporation. The statement combined an analysis of improved financial position in respect to its earning power, of its inventory position, of the reasons for a present conservative building program, and of harmonious relations with its large working staff.

"The year 1946," said Mr. Cullen, "was the first full year of post-war operations. It was a year in which demand for all paper products was so great that the industry was unable to meet it under existing conditions. It was this great demand for every pound of paper we could produce coupled with the fact that our mills are now almost wholly integrated and in good operating condition and the elimination of the excess profits tax that enabled us to achieve the largest earnings in the history of the company, $31,179,000 or $8.50 per share on our presently outstanding Common stock.

"Next to our record earnings perhaps the most important accomplishment of 1946 was the major change brought about in the capital stock structure of your company. At the beginning of the year there was outstanding $92,596,300 par value of Cumulative Convertible 5 percent Preferred stock and 1,863,862 shares of Common stock. At the end of the year there was, and at present there still is outstanding $23,000,000 stated value Cumulative $4 Preferred stock and 3,560,000 shares of Common stock. This change was accomplished by periodic calls of the 5 percent Preferred stock and by making an exchange offer of 1 share of $4 Preferred stock and ¼ share of Common for each share of 5 percent Preferred. The details of the amount of 5 percent Preferred stock converted into Common, redeemed and exchanged have been fully set forth in our annual report.

"One result of these changes is that dividends ahead of the Common have been reduced from $4,629,815 per year to $920,000 per year, a reduction of $3,709,815 or slightly more than $1 per share on the entire Common stock outstanding.

"The capital stock structure is now a conservative one.

"The detailed steps taken to reduce our funded debt have been fully ex-

(Continued on page 28)

Gurley Promotes Plant Tours For Foreign Students at R.P.I.

TROY, N. Y.—Plant tours and dinner discussions with prominent business leaders have been initiated for the various groups of foreign students now attending Rensselaer Polytechnic Institute, by W. & L. E. Gurley, scientific and surveying instrument manufacturer. With the return of the world to peace, foreign students in good number are once again attending American universities, and W. & L. E. Gurley has adopted this plan to familiarize the visitors at R.P.I. with the methods of production in effect at an American engineering instrument company.

Chinese students attending R.P.I. were the first group invited to see the Gurley plant and facilities. A dinner at the Troy Club preceded the tour.

Imperial Paper Promotes Wakefield

GLENS FALLS, N. Y. — Harold A. Wakefield, district manager of the New York branch of the Imperial Paper and Color Works, has been promoted to the post as assistant general sales manager of the Pigment Color Division and will move to the executive offices at Glens Falls.

NEW SOURCE OF KRAFT SULPHATE PULP
From this new pulp mill at Atenquique, Mexico Gottesman & Company, Inc., is preparing to augment United States supplies of Kraft Sulphate pulp.

Pacific Mills Aims At New Safety Mark

VANCOUVER, B. C.—To celebrate the noteworthy achievement of recording 100 days of continuous operation without a single lost-time industrial accident, more than 170 employees of Pacific Mills' Vancouver Converting Plant have set themselves a new objective of at least 200 accident-free working days.

Both employee and supervisory groups were congratulated on their fine safety performance by Paul E. Cooper, Pacific Mills president, who urged them to continue their combined efforts in accident prevention activities. Mr. Cooper also stressed the importance of training new employees in safety consciousness as an aid in maintaining the plant's safety record.

During the meeting eight Converting Plant employees who had successfully qualified in recent Industrial First Aid examinations received their badges and certificates from A. R. Webb, production superintendent. These were: Ralph White, Edward Wiltshire, Sr., John Sutherland, Arthur Welton, Donald Russell, Harry Weedon, Clarence Somerville, Thomas Robertson.

Each also received a $20 cheque from the company as a reward for completing the Industrial First Aid courses.

St. John Ambulance Association certificates were presented to Albert Merry and Joseph Grimaz, who had qualified previously.

R. H. R. Young, Pacific Mills manager of manufacture, presented three employees, Frank McDermott, William Strelaeff and Norman Toft, with cheques awarded by the plant's Labor-Management Committee for accepted suggestions improving production efficiency.

Arthur Francis, chief inspector for the B. C. Workmen's Compensation Board, was a guest of the company at the meeting.

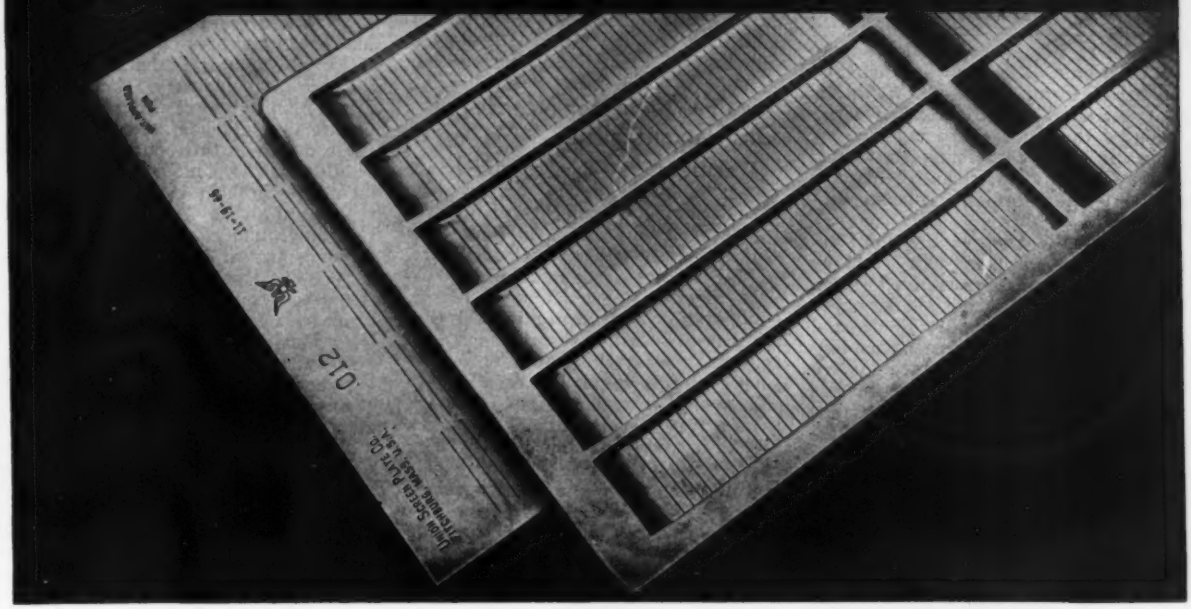
In addition to the various presentation ceremonies, the meeting was featured by the showing of an excellent color film on marine safety entitled, "Safety Ahoy." Refreshments, consisting of coffee, sandwiches and cake, were served during the shutdown of factory operations.

Little Elects Marek As Vice-President

CAMBRIDGE, Mass.—Leroy F. Marek has been elected vice-president of Arthur D. Little, Inc., industrial research organization. Mr. Marek has been with Little, since 1934 and has for several years been in charge of its chemical engineering activities.

He is a graduate of the University of Texas and received his master's degree from Massachusetts Institute of Technology, where he served as acting director of the research laboratory of Applied Chemistry. Mr. Marek is a resident of Lexington, Mass.

CHANNEL BACK



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    - Slot area increased compared to old style plates
      - Sufficient strength for use on any screen equipment
- Weight of plate reduced for ease in handling
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UNION SCREEN PLATE COMPANY

FITCHBURG, MASSACHUSETTS

SAPEYES Hear Tale of Pressure on Printing

CHICAGO — The western division of the Salesmens Association of the Paper Industry held another of its interesting closed sessions on Monday noon, May 12, at the Hotel Sherman with Carleton Melick, sales manager of the Miehle Printing Press Corporation, as guest speaker. Mr. Melick was introduced to an interested audience by Rube Swan of the Champion Coated Paper Company, chairman of this current series of informational get-togethers.

According to reports, the chief reaction to the excellent story told by the printing press executive was a wonderment as to where all the paper was coming from to fill the demand created by new high speed printing presses! Those at the meeting were quoted as saying that while recent developments in the printing press manufacture were indeed amazing, the question before the house was still how could these big 6000- impressions - an - hour machines get enough paper to keep going. Mr. Melick stated that several big new presses were now installed in the area and that well over two dozen were on order—presses of the biggest high speed variety. He also was reported as saying that there were few replacement jobs. It was stated by some present that Mr. Melick said that for every thirty new presses installed only one old one goes onto the rubbish heap. To his audience, Mr. Melick's comment simply meant that the demand for printing papers was growing more enormous daily with the production rate of the old presses multiplied many times by the installation of new machines.

The SAPEYES also announced the first golf outing of the year to be held on May 21 at the Knollwood Country Club in Highland Park. Lennox Ransome, Union Bag, is the current golf chairman. He has announced that the western division hopes to get in five monthly outings during the season, thus bringing the enthusiastic golfers back to a pre-war status on these affairs.

Stora Kopparbergs Celebrates 600th Anniversary at Falun

FALUN, Sweden—Stora Kopparbergs Bergslags Aktiebolag will celebrate its 600th anniversary here on May 20. Crown Prince Gustaf Adolf of Sweden is expected to be among the three hundred celebrants attending these unusual ceremonies. One of the features of the program will be a board of directors meeting held in the original board room which is now located in a mine chamber some 300 feet below the earth.

The Swedish firm which produces steel, copper, chemicals, hydro-electric power, paper, wood pulp, lumber and has plans for an oil refinery, had its own regiment of soldiers in the early days of its existence. Translated, the name of the company means Great Copper Mountain.

James Donaldson, president of Stora Kopparberg Corporation, affiliated American concern, sailed May 9 on the *Gripsholm* to join in the festivities. Mr. and Mrs. Donaldson were accompanied by Mr. and Mrs. Clark Howell, publisher of the Atlanta Constitution.

Await Washington Word On Alaskan Policies

WASHINGTON — Two companies are reported unofficially to be seriously considering development of hydropower plants in Alaska, in connection with newsprint mills, it is learned here.

This follows a recent Senate newsprint investigating committee's report, containing a recommendation that Alaskan possibilities be considered in connection with the future newsprint supply of this country.

The suggestion has agitated an issue as to private development of resources in Alaska versus public power. The Senate Small Business Committee inferentially favored private development by suggesting that Interior Department and Agriculture Department's long range approach should be toward promotion of private interests in Alaska. This is the opposite of the present Interior Department position.

Testimony of Department of Agriculture representatives before the newsprint committee revealed the interest of private companies in Alaskan hydro-newsprint possibilities.

National Container Sales Doubled In Quarter

LONG ISLAND CITY, N. Y. — Consolidated net sales of National Container Corporation and its subsidiaries for the three months ended March 31, 1947, amounted to $10,964,599.04 compared with $5,375,915.44 for the three months ended March 31, 1946. Net profit for the three months ended March 31, 1947, after all charges including Federal taxes based on income, totaled $3,109,024.53 which after provision for preferred dividends amounted to $3.70 per common share on 838,066 common shares outstanding as at March 31, 1947. This compares with net profit of $707,546.74 for the three months ended March 31, 1946, and ninety cents per common share on 765,489 common shares outstanding as at March 31, 1946.

Marathon's Choristers Make Public Bow

MENASHA, Wis. — The Marathon Choral Club made its first all-community appearance Saturday evening, May 17, in the Menasha High School auditorium. The 72-voice mixed chorus, which consists of factory and office employes of Marathon Corporation, has been in rehearsal for six months. The concert featured 11 choral numbers. There was no admission charge.

French Paper Makers Visit Watertown Area

WATERTOWN, N. Y. — Three representatives of a French association of paper and allied mills in the Watertown area recently and, through an interpreter, expressed themselves as amazed by technical advances made by the American industry. The three are Rene Sibille, Pierre Martin and Alphonse de Guillebon, who are visiting for a month in this country at the invitation of the United States government. With them is Jose L. Mifsud, representing the American Express Company, under whose auspices the group is traveling.

Spending the morning at the St. Regis company plant in Deferiet, the members visited Bagley & Sewall and Coty Machine Company in the afternoon following a luncheon at the Hotel Woodruff arranged by the industrial committee of the chamber of commerce.

Mr. Mifsud said that, in addition to studying American paper-manufacturing techniques, the group was interested in eventual purchase of machinery. Bagley & Sewall makes papermaking machinery while Coty Machine manufactures paper bag - making devices.

Present at the luncheon at the hotel in addition to the three French papermakers and their interpreter were R. H. Fisher, chairman of the chamber of commerce industrial committee; Carroll L. Thompson, treasurer of Bagley & Sewall; David C. Knowlton, vice-president of Knowlton Brothers; Cecil B. Aiken of Coty Machine; D. A. Thomas, vice-president of Bagley & Sewall, and Ernest C. Gould, secretary of the chamber.

The spokesman for the visitors said that the operation of the Roberts grinders, machinery for pulverizing wood, at the St. Regis plant was of particular interest to the French paper makers. He also praised other phases of the operation at the Deferiet mill, one of the largest and most modern of its kind in the world.

Mr. Sibille, he explained, now has one glassine paper plant in France, two other specialty mills have been destroyed by the Germans during the war. Mr. Sibille, he said, was interested in purchasing machinery in this country.

Walloomsac Buys Site For Plant at Mechanicville

COHOES, N. Y.—Further growth of the paper industry of the Mohawk Valley is reflected in the announcement by the Walloomsac Paper Mills, Inc., that it has purchased a site near Mechanicville for the location of a new plant. It was stated that plans for the new factory have not yet been completed and it is doubtful if it will be ready for operation before late 1948 or 1949. The new structure will manufacture various paper products.

He talked *Chlorine* into an industry

"A great talker"—so a biographer describes James Watt, brilliant father of the steam engine. One can almost visualize him as he regaled his father-in-law, MacGregor, with the time-saving advantages of using "oxygenated muriatic acid" in his bleach works. Chlorine was thus talked into the first commercial bleaching application—an application that changed the entire character of an industry.

From this experimental beginning, the bleaching powers of Chlorine have been utilized with inestimable value in the textile and paper industries. In its comparatively new role as the versatile tool of chemical synthesis, Chlorine is helping to bring many new refinements to our civilization . . . a civilization it has protected from pestilence through its well-known germicidal properties.

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FINANCE

Puget Sound Profits Up in First Quarter

BELLINGHAM, Wash.—Reflecting increased volume at higher sales prices and operation of cost-saving equipment, Puget Sound Pulp & Timber Company derived a net profit of $947,393 from operations in the first quarter of 1947, and in addition realized a net capital gain of $131,218 from an instalment payment received on Canadian timber properties which were sold in 1944.

Pulp production amounted to 24,567 tons in the first quarter of 1947, against 15,403 tons in the corresponding period of 1946. Pulp sales totaled 26,371 tons in the 1947 quarter, in comparison with 16,636 tons the year before.

Operating net for the quarter was equal to $2.79 a share on the common stock, and the capital gain was the equivalent of 39 cents a share additional, or a total of $3.18 a share. Under the different conditions prevailing in the first quarter of 1946, net profit amounted to $94,308, or 24 cents a share on the common stock.

Net sales and other revenues amounted to $3,157,821 for the first three months of 1947, compared with $1,207,816 in the like period of 1946. After all charges before Federal income taxes, profit from operations for the quarterly periods amounted to $1,528,036 this year, against $151,680 last year. Provision for Federal taxes on income for the first quarter of 1947 totaled $580,644, in comparison with $57,372 a year ago.

The instalment payment on Canadian timber properties was $375,000, of which $200,043 was return of capital and $174,957 constituted capital gain. On the latter, $43,739 capital gains tax has been set aside, leaving $131,218 as net capital gain.

Expect Recommendation to Extend Export Controls

WASHINGTON — A recommendation that Congress approve present export controls for another year beyond the present expiration date, June 30, 1947, was indicated as probable, following a meeting last week of a House subcommittee considering this proposal.

The White House, as well as State Department and other agencies have requested such an extension. The U.S. Chamber of Commerce, the National Association of Manufacturers, and many exporting interests in varied fields, are opposing extension of controls.

Export control was established in 1940, and during the war applied to upwards of 3200 articles and commodities, for which an export license had to be obtained in conformity to country and other requirements. Controls still operate on some 400 articles.

Government officials indicated that with respect to some critical items and certain others, controls were necessary for another year, but changes might be made meanwhile in various items now under control, either removing controls or modifying the restrictions.

Rolland Reports Year Best Since 1941

TORONTO — Rolland Paper Company, in the year ended Dec. 31, 1946, enjoyed the best net profit since 1941 at $152,427 as compared with $133,618 the year before. Although sales increased, J. Pierre Rolland, president, points out that earnings reflect the fact that the small increase in ceiling prices granted during the year was not proportionate to the increase in costs.

Mill output for the year, he said, has been satisfactory, and a program of plant rehabilitation and additions has been authorized by directors. Expenditures on capital account last year amounted to $131,789.

Operating profits of $630,768 compared with $537,953 in 1945 and other income amounted to $15,189, against $19,144. Depreciation and bond interest were little changed at $213,751 and $66,062, respectively. Income and excess profits taxes absorbed $165,000 compared with $94,177, excluding $1,533 refundable, in 1945. Earned surplus as of Dec. 31, 1946, was shown at $292,838. A year ago it was $334,993. Extraordinary charges to surplus account during the year included $74,700 representing premium paid on redemption of the six percent preferred stock. During the year working capital was increased $167,092 to stand at the year end at $1,337,200.

Foley on Boy Scout Council

Harold S. Foley, president of the Powell River Co., Powell River, and Vancouver, B. C., has been elected on the committee of the Provincial council of the Boy Scouts Association at Vancouver.

FINANCIAL RECORD OF THE WEEK

New York Stock Exchange

High, Low and Last for Week Ending May 10, 1947

STOCKS

	High	Low	Last
A. P. W.	4½	4⅛	4⅛
Armstrong Cork Co.	43¾	39½	39½
Armstrong Cork Co., pf.	104	104	104
Celotex Corp.	22¾	20⅛	20½
Celotex Corp., pf.	21	20½	20½
Certain-Teed Products Corp.	14⅜	12⅛	12⅛
Certain-Teed Products Corp., pf.	....	....	....
Champion Paper & Fibre Co.	21¾	19½	19½
Champion Paper & Fibre Co., pf.	109	109	109
Congoleum Nairn Co.	26	24	24
Container Corp. of America	37½	35	35
Crown Zellerbach Co.	26¾	25⅜	25¾
Crown Zellerbach Co., pf., 4.20	106⅜	103	103½
Crown Zellerbach Co., pf., 4	111½	106¼	106⅜
Dixie Cup Co.	27¼	26½	26½
Dixie Cup Co. A	51¾	50½	51¼
Flintkote Co.	26⅞	24¼	24¼
Flintkote Co., pf.	107⅛	107	107⅛
Robert Gair	6½	5¾	5¾
Robert Gair, pf.	20	19¾	19¾
International Paper Co.	43⅝	49¼	39¼
International Paper Co., pf.	102⅛	101½	101½
Johns Manville Corp.	118⅞	109	109
Johns Manville Corp., pf.	111¼	111	111
Kimberly-Clark Corp.	24	23	23
Kimberly-Clark Corp., pf.	106⅞	105½	106
Mac Andrews & Forbes	36¼	35⅜	35⅜
Mac Andrews & Forbes, pf.	....	....	....
Marathon Corp.	22	21	21
Mead Corp.	19⅝	17¼	17¼
Mead Corp., pf., 4¼	99⅜	95	95
Mead Corp., pf., 2	46	46	46
National Container Corp.	38⅜	34½	34½
Paraffine Companies, Inc.	68	60	60
Paraffine Companies, Inc., pf	....	....	....
Rayonier, Inc.	21⅛	17½	17⅜
Rayonier, Inc., pf.	37¼	36½	36¾
Ruberoid Co.	48½	45½	45½
Scott Paper Co.	43⅝	43	43½
Scott Paper Co., pf.	98¼	97½	97½
Sutherland Paper Co.	39	38	38
Union Bag & Paper Corp.	29¾	26	26
United Paperboard Co.	15½	14½	14½
U. S. Gypsum Co.	93¼	87¾	87¾
U. S. Gypsum Co., pf.	196	196	196
West Virginia Pulp & Paper Co.	36½	35	35
West Virginia Pulp & Paper Co., pf.	....	....	....

BONDS

Abitibi Pulp & Paper Co., 5s '53	....	....	....
Celotex Corp., 3¼s '60	....	....	....
Certain-Teed Products Corp., 5½s '53	....	....	....
Champion Paper & Fibre Co., 3s '65	....	....	....
Mead Corp., 3s '66	103¼	103¼	103¼

New York Curb Exchange

High, Low and Last for Week Ending May 10, 1947

STOCKS

	High	Low	Last
Great Northern Paper Co.	42	40¼	40¼
Hummel Ross Fibre Corp.	....	....	....
St. Regis Paper Co.	8¼	7⅝	7⅝
Taggart Corp.	9⅛	9	9

BONDS

American Writing Paper Co., 6s '61	108⅛	101	101

Can you answer these questions about REPAIRING CAST IRON EQUIPMENT by welding?

Q. Is welding a practical way to repair cast iron equipment?

A. Yes, indeed. Welding saves American industry many thousands of dollars annually by keeping existing cast iron equipment in service.

Q. Is it harder to weld cast iron than steel or other metals?

A. Cast iron frequently proves more difficult to weld than other common metals. This is because of cast iron's tendency to change its structure under high heat.

Q. What is the effect of welding heat on cast iron?

A. Some of cast iron's useful properties depend on a proper balance between graphitic and combined carbon. When cast iron is reheated to the molten state, as in welding, some of the graphitic carbon recombines with iron to form combined carbon. Unless the iron cools gradually, the carbides thus formed remain as combined carbon. An excessive amount of combined carbon in cast iron makes the iron hard and extremely difficult to machine.

Q. How can this tendency be eliminated?

A. First, by avoiding excessive heat in the welding zone. Second, by obtaining a slow rate of cooling. Third, by choosing the right welding material.

Q. What is the best method of welding cast iron?

A. All have their advantages. For years, oxy-acetylene was the favorite. Now, however, because of recent improvements in electrode composition, the metal-arc method is coming rapidly to the fore.

Q. What are these improvements in electrode composition?

A. Research on electrodes for welding cast iron has centered around achieving strong, machinable welds, free from cracks and porosity. At INCO this has meant the careful study of the materials used for core wire and flux coatings in the development of the NI-ROD* electrode.

Q. Does NI-ROD provide sound, strong, welds?

A. Extensive use has proved the soundness of NI-ROD welds. NI-ROD's slag does an excellent job of scavenging gas from the weld metal, assuring deposits of maximum strength and freedom from porosity.

Q. Is preheating necessary with NI-ROD?

A. NI-ROD flows so well and "washes" so evenly against the sides of the joint that it is usually unnecessary to preheat the joint. However, hard-and-fast rules cannot be formulated to cover all conditions. Preheating to 300-400°F is useful on many jobs to reduce stresses or provide the highest degree of machinability.

Q. Are NI-ROD welds easily machinable?

A. Yes, NI-ROD's deposit and weld zone are easily machinable. The deposit is nickel, a metal which doesn't lose its machining characteristics under rapid temperature changes. The fusion zone retains its machinability because NI-ROD's smooth arcing and flow characteristics keep the heating-quenching cycle to a minimum.

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Canada Can't Fathom Talk of Conspiracy

TORONTO — An attitude of patient resignation is one description of the reaction here to charges by Senator Claude Pepper that a Canadian-Scandinavian cartel is operating to keep the price of newsprint up in the United States. In fact, the charges appear to be rather ridiculous, in the light of known facts. Practically all Canadian newsprint is sold by contract at $90 per ton. At the same time Swedish newsprint has sold at high as $175 per ton. Exports of Norwegian and Finnish newsprint to the United States are still not large enough to have any appreciable effect on the market for Canadian newsprint.

However, it is felt here that the full-dress inquiry into the U. S. newsprint industry to be undertaken by the anti-trust division of the Department of Justice, which is to open in New York on May 26, will probably go into these charges and likely the good Senator's apprehensions will be dissipated.

The Senator's reference to the cartel's agent being "Scannews" provokes a chuckle or two here among those who know that "Scannews" is a publication well known in the industry and which publishes information on Scandinavian newsprint activities. The Canadian Newsprint Association occasionally exchanges with it such statistics as production and export figures.

As familiar as most Canadians are with the fulminations of United States politicians (which are not unlike their own Canadian brand), they are frequently at a loss to understand why such prominent personalities so often get into print with such cock-eyed statements.

Two other propositions currently being discussed in the United States have Canadian newsprint manufacturers shaking their heads. The propositions referred to are the talks by U. S. publishers and government agencies of two projects to increase newsprint production in that country. It is noted with some surprise that W. G. Chandler, speaking for the American Newspaper Publishers' Association, before the House Newsprint Committee in Washington this week, favored both the erection of newsprint mills in Alaska and the development of a newsprint mill in Southern Alabama.

It is understood here that the greatly increased cost of transportation from Alaska would call for a price considerably above the average.

The other proposition involves the use of southern pine in newsprint manufacture. It is understood that this possibility was investigated a decade or more ago and opinion then was that southern pine was not economical for newsprint purposes, as it is said to rot very rapidly, which would mean that inventories would be limited. It is understood that southern pine is being used almost exclusively for higher-priced kraft papers, for which it is much better suited.

As far as the Canadian newsprint industry is concerned, erection of either or both the proposed mills would have little effect. At present, demand from newsprint customers outside the United States would more than replace any losses which might result from new U. S. mills, it is stated. From the small U. S. publishers' standpoint, neither of the projects is likely to be in operation within three or four years. Even then, many feel that newsprint from these mills would have to be subsidized in some manner.

Great Lakes Net Is Running Higher

TORONTO — Net earnings for Great Lakes Paper Co. were $321,550, after depreciation and provision for income tax, for the first quarter of 1947, Hon. W. Earl Rowe, president and managing director, announced. Mr. Rowe told the annual meeting that profits were satisfactory and substantially above last year. He added that full capacity operations had reduced per ton costs and that the future looks promising with no sign of reduced demand. The company is engaged in a program which will increase newsprint capacity by about 20 percent and the effects of this work will be felt early in 1948.

In answer to a question Mr. Rowe said dividends on the common stock would be paid when the board felt one could reasonably be initiated and maintained. Meanwhile, the company must be kept in a strong working position. Shareholders were told that while there might be a temporary business lull or recession there was not likely to be a reduction in newsprint consumption in the next three to five years.

No comparable figures for 1946 were announced, but the above figures will indicate profit equal to 30 percent of the total net profit of $1,063,147 for the full year of 1946 and is slightly above the net profits of $321,311 for the whole year 1945. Operating profit was $938,112 for the first quarter of 1947 ($3,837,445 for the whole of 1946). If the rate of earnings shown for the first quarter is maintained for the next three quarters, Great Lakes Paper could show $2.29 a share on the new common shares. This would be equivalent to $4.58 a share for presently outstanding common.

Shareholders unanimously approved a plan of capital arrangement at a special meeting held following the annual meeting this week. Briefly, the effect of the proposal was to eliminate the participating feature of the present Class A shares in return for two new common shares, and give present common shareholders two new common shares for each old share held. The vote was 62,791 shares for and 48 shares against. An amendment to eliminate the callable feature of the new preferred shares was defeated.

13½ Cents Raise Goes In Effect at St. Regis

WATERTOWN, N. Y.—An increase of 13½ cents an hour in the pay scale of northern New York plants of the St. Regis Paper Company and the Taggart Corporation has gone into effect for employes of those mills, after wage negotiations that required only two days for a settlement. The increase which became effective as of May 1 brings the hourly scale to $1. Earlier reports on the new contract had correctly stated the amount of the raise but a typographical error in a heading gave the increase as 18½ cents.

The boost will mean an additional outlay of $1,000,000 in payrolls for the year ending May 1, 1948, said Clifford T. Wenzel, personnel director for St. Regis.

The 3,000 workers affected are members of 22 union locals and involve all trades affiliated with the operation of the St. Regis and Taggart plants in the area extending from Oswego through the north country.

Among the demands sought by the unions, none of which was met, were: Two weeks' paid vacation for employes with three years' service; three weeks' paid vacation for ten-year employes; changes in seniority schedules and a five-cent differential for the second and third night shifts.

Representing the St. Regis and Taggart firms at the wage conference table were: Mr. Wenzel, Alex Smalley, New York, labor advisor to the president; William Mercer, New York, assistant to Mr. Smalley; William R. Adams, Watertown, general manager of Taggarts; Lewis Burdick, St. Regis plant superintendent, Deferiet; and Willard Hahn, New York.

Provincial Paper Program Grows to $825,000

PORT ARTHUR, Ont.—Substantial extensions to the plant of Provincial Paper, Ltd., here involving an expenditure of $425,000 apart from a $400,000 program authorized a year ago, were outlined recently by E. Lorne Goodall, general manager of the plant.

The $825,000 program, which was started last year, will be completed in June 1948. The "first half," covering equipment and additions to produce a new type of paper, is scheduled for completion next June.

The company plans to extend its super calendar capacity by installing new high speed super calendar and winding equipment and revamping present methods of handling bleached and unbleached sulphite pulp on the paper machine, Mr. Goodall said this would involve changing some of the buildings used for the purpose and the installation of large stock storage tanks.

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Syracuse Offers 24 Fellowships

SYRACUSE—The New York State College of Forestry has established twenty-four graduate fellowships carrying stipends from $455 to $1,300 for the college year 1947-48. These fellowships are available to students pursuing study leading to the Master of Forestry, Master of Science, and Doctor of Philosophy degrees.

Recipients may specialize in Pulp and Paper Manufacture, Wood Chemistry and Plastics, among other fields of forestry and forest products.

Holders of these fellowships also are excused from paying college tuition and regular college fees normally amounting to approximately $400 per year. Recipients are to assist in teaching and research work for not to exceed 15 hours per week. Veterans and non-veterans are eligible for these fellowships.

The college has in addition a few industrial fellowships and other special research assistantships which permit holders to carry part or full time graduate work. An applicant must meet college standards for admission to graduate study. Applications should be made by June 25 to the Assistant Dean, The New York State College of Forestry, Syracuse.

Professional Group Plans Outing at Starved Rock

CHICAGO — One of the outstanding sports and social events ever undertaken in the Chicagoland area has been arranged for June 28 by the Chicago Professional Paper Group. On that date members and guests are to journey to Starved Rock State Park, some ninety miles southwest of Chicago, for a combination outing and golf party which is the subject of a big four-page brochure from F. D. Long of the Container Corporation of America, head of the Chicago Professional Paper Group.

Golf for both ladies and gentlemen, picnic, hiking, boat rides, card games and even a "kiddies' playground" are all combined into the week-end outing beginning with a noon luncheon get-together. Starved Rock State Park is one of the outstanding scenic spots of the State.

Members of the Outing Committee busily engaged in preparing for the big event are A. Dreshfield, D. O. Guth, Paul Soderdahl and G. N. Alderson. Ladies' and children's activities are to be supervised by the wives of the committeemen.

Gebhart Staff Gets Raise

DAYTON, O.—Signing of a new contract calling for an 8½ percent wage increase, five paid holidays and other provisions, was announced May 14 by the Gebhart Folding Box Company and officials of CIO Local 1239, United Paper Workers of America. The contract was signed following a week's negotiations. It is the sixth contract to be agreed upon by the two parties and affects 80 to 90 employes. Other provisions of the contract call for a $10 to $25 Christmas bonus and one to two week's vacation. The wage increase will amount to 11 cents an hour for most employes.

Flambeau Mill Joins Trees for Tomorrow

MERRILL, Wis.—Folke Becker, president of Trees for Tomorrow Inc., has reported that the Flambeau Paper Company, Park Falls, had become a member mill of the paper industry reforestation unit. Leonard Kuehl, executive vice-president of the Flambeau Company, has been elected a member of the board of directors.

The organization, originally made up of nine paper mills, was founded in 1944. Since that time two million trees have been distributed to land owners, $7,500 in forestry scholarships will have been awarded at the end of the present school term, a conservation camp is in operation at Eagle River, and a large number of school, community, and memorial forests have been established under its sponsorship.

A pattern laid down for close cooperation with small land owners, schools, and communities will be introduced in Price County where the Flambeau Paper Company is located.

B. C. Foresters Elect Mulholland and Orchard

Fred D. Mulholland, chief forester, Canadian Western Lumber Co. Ltd., Vancouver, B.C., and C. D. Orchard, deputy minister of forests for British Columbia, have been elected president and vice-president respectively of the newly created Association of British Columbia Foresters. This association was incorporated under the British Columbia Foresters' Act at the recent session of the B.C. Legislature and has now been officially organized.

Other members of the council, appointed by the Act, are J. E. Liersch, Powell River Company; R. M. Brown, Dominion Government Forest Products Laboratory; L. R. Andrews, British Columbia Lumber and Shingle Manufacturers' Association; J. D. Gilmour, H. R. MacMillan Export Company; H. J. Hodgins, Pacific Mills Ltd.; E. E. Gregg, Western Plywoods Ltd.; M. W. Gormely, B. C. Forest Service; H. A. Richmond, Dominion forest entomologist.

The council appointed Prof. F. Malcolm Knapp, department of forestry, University of British Columbia, to registrar of the association.

All practicing foresters in British Columbia who are required by the new act to be members of the association should apply to the registrar for information in connection with registration.

Seek Standards for Frozen Food Pack

NEW YORK — Plans for what ultimately may be a nation-wide standards program for the frozen foods packaging industry were set under way last week at a meeting in New York under the auspices of the American Standards Association. Twenty-two representatives from eight trade and technical associations, two government bodies, and fourteen companies in the field at a half-day session under the chairmanship of Cyril Ainsworth, technical director of ASA, asked the Association to appoint a smaller study group with additional representation from frozen food packers to lay out a broad program of possible standards work in the industry.

The scope of the smaller working committee, which will be appointed shortly by Mr. Ainsworth, is so broad as to allow consideration not only of frozen food package sizes, but also of their materials, operating characteristics, and the like.

At the same time the industry group informed Mr. Ainsworth, who will be the American delegate at the first official meeting of the International Organizations for Standardization at Zurich, Switzerland, on June 18, that the American frozen foods packaging group did not yet appear ready to undertake an international standardization project.

Such a project already had been suggested for international action by Norway. One of the prime purposes of yesterday's meeting was to secure the advice of American interests, so that this country's point of view could be reflected adequately at the Zurich meeting by the American delegate.

The important trade groups represented at the meeting included: Packaging Machinery Manufacturers Institute, Frozen Food Foundation Inc., Packaging Institute, Frozen Food Committee of the National Food Brokers Association, Frozen Food Institute, Inc., Refrigeration Equipment Manufacturers Association, American Hotel Association, and the American Society of Refrigerating Engineers.

Representatives whose company affiliations included the following were present at the meeting: Package Machinery Company, Continental Can Company, Riegel Paper Corporation, Pratts Frozen Foods, Inc., Van R. H. Greene, Specialty Paper and Board Affiliates, Fibreboard Products, Inc., Ashenfelter and Morrow, Inc., American Can Company, New Jersey Machine Corporation, Cecil Boling Company, Food Consultant Service, Reol Company, and the Bridgford Company.

Moves To Opera Building

CHICAGO — The Tuttle Press Company has recently moved its Chicago office to the fifth floor of the Civic Opera Building at 20 North Wacker Drive. The telephone number is Central 7013.

Burns Sends Strikers Back at Wausau Mill

WAUSAU, Wis. — Workers at the Wausau Paper Mills Company plant at Brokaw returned to their duties May 19 after a walkout since May 9. They thus complied with a "direct order" to return issued May 16 by Matthew J. Burns, president of the International Brotherhood of Paper Makers at Albany, N. Y.

Those on strike in addition to the Paper Makers Local 381 were members of the AFL Pulp, Sulphite and Paper Mill Workers, Local 260, and the unorganized plant foremen.

The walkout was called in protest against the company's refusal to allow the union to appear before the board of directors and ask why Carl Magnus, vice-president and general manager, was not to be retained after August 31, when his contract with the company expires. In calling the walkout, the unions declared they were satisfied with working conditions at the mill and with wages.

Members of Local 381 must "report for work forthwith and make every effort possible to get said plant back into full production and operations," Burns' order stated.

"If the officers and members of the local hesitate to comply with this order, the charter of the said local will be revoked at once and the entire membership of this local will be expelled."

He added that "the board of directors of the Wausau Paper Mills Company can no more tolerate interference with its functions by workers and members of this union than the International Brotherhood of Paper Makers could tolerate interference with its internal affairs by the officers or board of directors of any corporation.

"There has been no violation or breach of current labor contract upon the part of the board of directors," Burns said. He added that a copy of his instructions had been wired to Harold C. Collins, company president.

Pennsalt Plans $3,500,000 Improvements at Wyandotte

WYANDOTTE, Mich. — The Pennsylvania Salt Manufacturing Company announced it now has under construction at its Wyandotte plant additional boilers and allied power generating equipment, including a completely new modern power plant building, at a cost of more than $3,500,000.

In addition to new equipment, Pennsalt is installing fly ash collectors for the present three large pulverized-coal burning boilers at an estimated cost of $200,000. The new boilers also will be equipped with the fly ash collectors. These collectors, made by the Western Precipitation Corp., will remove solid products of combustion in the flue gases in an amount equal to or better than existing municipal requirements.

The new boilers and power equipment will be completed during 1948, it was said. The actual combustion space of these new boilers has been designed to permit use of the lower grade coal which is the only grade now obtainable. These boilers will have a higher steaming capacity than the present ones and will generate steam at pressure and temperature levels which will add to the overall efficiency of operation of the steam power facilities.

Engineers and constructors for the new plant and equipment are Ford, Bacon and Davis, Inc., of Philadelphia and New York.

Newsprint Use Rose 16 Per Cent in April

NEW YORK — Daily newspapers reporting to the American Newspaper Publishers Association had stocks of newsprint in transit and on hand representing an over-all average of 29 days' supply at the end of April 1947, which is the same number of days supply as compared with stocks on hand and in transit at the end of March 1947. This supply of 29 days at the end of April compares with 30 days at the end of April 1946, 43 days at the end of April 1945, and 35 days at the end of April 1941.

Daily newspapers reporting to the ANPA consumed 297,461 tons of newsprint in April 1947, compared with 258,984 tons in April 1946 and 256,431 tons in April 1941. This was an increase in April 1947 over April 1946 of 14.9 percent and an increase over April 1941 of 16.0 percent.

The total estimated newsprint consumption in the United States for April 1947 was 407,481 tons which includes all kinds of uses of newsprint. For the first four months in 1947 it is estimated to be 1,541,067 tons. During the first four months of 1947 the reporting newspapers used 1,124,979 tons of newsprint, an increase of 15.9 percent over the first four months of 1946 and an increase of 16.7 percent over the first four months of 1941.

Four Wisconsin Mills Set New Wage Scale

APPLETON, Wis. — Four Wisconsin rag content companies which operate under a uniform labor agreement with their four respective A. F. of L. locals have recently completed negotiations with the unions. It provides an increase of 6½ cents per hour to about 1,200 workers, 5 cents of which is a general "across the board" increase and 1½ cents an hour in the form of three paid holidays. The new base rates are 93 cents for men and 81 cents for women. Hours of work remain unchanged at 48 hours per week.

The four companies are Whiting-Plover at Stevens Point, Fox River Paper Corporation at Appleton, Gilbert Paper Company at Neenah and Neenah Paper Company at Neenah.

The negotiations were held here, with A. J. Schierl, representing the companies, and E. A. Noren, spokesman for the unions.

Newsprint Shipments Run 11 Per Cent Up

NEW YORK—Newsprint production in Canada during April 1947 amounted to 369,490 tons, according to the News Print Service Bureau. Shipments to 376,305 tons. Production in the United States was 71,933 tons and shipments were 73,988 tons. The output in Newfoundland was 29,389 tons and shipments were 30,558 tons making a total North American production of 470,812 tons and shipments of 480,851 tons. Total production in April 1946 was 434,421 tons and shipments were 446,-927 tons. North American production in April 1947 was greater than that in any preceding April.

The Canadian mills produced 144,-455 tons more in the first four months of 1947 than in the first four months of 1946, which was an increase of 11.0 percent. The output in the United States was 10,534 tons or 4.0 percent more than in the first four months of 1946; in Newfoundland production was 4,374 tons or 3.7 percent more, making a total increase of 159,363 tons, or 9.4 percent more than in the first four months of 1946, and also was higher than in any preceding similar period.

Stocks of newsprint paper at the end of April were 126,566 tons at Canadian mills, 8,925 tons at United States mills, and 83,466 tons at Newfoundland mills, making a combined total of 218,957 tons compared with 228,996 tons on March 31, 1947, and 196,270 tons at the end of April 1946.

Kalamazoo Valley TAPPI Plans a Day at Golf

VICKSBURG, Mich.—The annual Kalamazoo Valley TAPPI golf outing will be held at the Gull Lake Country Club on Thursday, June 12th. The first tee-off will be at 1 p.m. with dinner at 7 p.m. There will be prizes for both golfers and non-golfers; the distribution of which will be pretty evenly divided.

The program committee, consisting of R. Trelfa, chairman, J. D. Dickson, Ken Graff, E. Taylor and J. Ruimveld with Harris Ware acting in an advisory capacity, have announced that there will also be a good after dinner program besides the regular distribution of prizes.

Rathmines Opens Department To Handle Mill Supplies

DUBLIN, Eire — Rathmines Paper Merchants, Ltd., the largest importers of paper and board in the country, are setting up a department to handle paper and board mill supplies of all kinds, such as felts, wires, chemicals, pulp, waste paper and machinery under the management of George Robertson, who is well known to the trade in the United States and Canada.

IMPORTS

NEW YORK IMPORTS

WEEK ENDING MAY 17, 1947

SUMMARY

Newsprint	8,315 rolls
Printing Paper	750 rolls, 6 cs.
Paperhangings	68 bls., 3 cs.
Wallpaper	1 cs.
Wrapping Paper	1,389 rolls, 131 pkgs.
Tracing Paper	38 cs.
Sulphite Paper	183 rolls
Embossed Paper	3 bls.
Photo Paper	149 cs.
Shelf Paper	3 bls.
Binding Paper	1 cs.
Surface Coated Paper	10 cs.
Drawing Paper	63 cs.
Filter Paper	70 bls., 37 cs.
Writing Paper	1 cs.

NEWSPRINT

H. G. Craig Co., A.C.D., Donnacona, 390 rolls.

H. G. Craig Co., G.T.D., Donnacona, 390 rolls.

H. G. Craig Co., Newscarrier, Donnacona, 377 rolls.

H. G. Craig Co., G.D.D., Donnacona, 390 rolls.

H. G. Craig Co., Kermic, Donnacona, 389 rolls.

Madden Reeve Angel & Co., Vretaholm, Hango, 981 rolls.

International Paper Sales Co., E. Hopkins, St. Johns, 5398 rolls.

PRINTING PAPER

Jay Madden Corp., Vretaholm, Hango, 280 rolls.

Madden Reeve Angel & Co., Vretaholm, Hango, 470 rolls.

S. H. Pomerance, American Shipper, London, 6 cs.

PAPERHANGINGS

W. H. S. Lloyd & Co., American Shipper, London, 68 bls., 3 cs.

WALLPAPER

Kersten Shipping Co., Indochinois, Havre, 1 cs.

WRAPPING PAPER

Jay Madden Corp., Vretaholm, Hango, 1278 rolls.

Powell & Co., Noordam, Rotterdam, 131 pkgs.

Curacao Trading Co., Uddeholm, Gothenburg, 111 rolls (glazed white).

TRACING CLOTH

E. Dietzgen & Co., Vasconia, Liverpool, 38 cs. (bleached cotton).

SULPHITE PAPER

Resolute Paper Products Corp., Uddeholm, Gothenburg, 183 rolls.

EMBOSSED PAPER

Jay Madden Corp., Vretaholm, Hango, 3 bls.

PHOTO PAPER

J. J. Gavin Co., American Shipper, London, 5 cs. (unsensitized).

Lep Transport, American Shipper, London, 100 cs. (base paper).

(———), American Shipper, London, 44 cs. (base paper).

SHELF PAPER

Jay Madden Corp., Vretaholm, Hango, 3 bls.

BINDING PAPER

Stevens Nelson Paper Corp., Oregon, Havre, 1 cs.

SURFACE COATED PAPER

Gevaert Co. of America, West Linn Victory, Antwerp, 10 cs.

DRAWING PAPER

Bankers Trust Co., Queen Elizabeth, Southampton, 4 cs.

Olympic Shipping Co., Oregon, Havre, 59 cs.

FILTER PAPER

J. E. Bernard Co., Domfront, Havre, 20 cs.

H. Reeve Angel & Co., Inc., Vasconia, Liverpool, 70 bls.

H. Reeve Angel & Co., Inc., American Shipper, London, 17 cs.

WRITING PAPER

M. J. Corbett & Co., Oregon, Havre, 1 cs.

STRAWBOARD

Premier Decorations, Inc., Norwalk Victory, Antwerp, 17 bls.

RAGS, BAGGINGS, ETC.

E. J. Keller, Co., Inc., West Linn Victory, Antwerp, 107 bls. old bagging.

(———), Exminster, Calcutta, 39 bls. old hemp net cuttings.

Irving Trust Co., Port Halifax, London, 144 bls. old cotton canvas.

(———), Vasconia, Liverpool, 9 bls. old wool rags.

Tradesmans National Bank Trust Co., American Shipper, London, 53 bls. old webbing.

Continental Bank Trust Co., Burbank Victory, Venice, 129 bls. dark cottons.

Amtorg Trading Corp., Kuban, Odessa, 503 bls. cotton linters, 19 bls. cotton cuttings, 6091 bls. cotton waste.

Atlas Waste Manufacturing Co., Bight Knot, Havana, 39 bls. cotton waste.

W. Steck & Co., Louis McHenry Howe, Alexandria, 30 bls. rags.

Amicale Wool Service Co., Louis McHenry Howe, Alexandria, 150 bls. dark cotton rags.

WOODPULP

Perkins Goodwin & Co., Oscar Borgesson, Hernosand, 6096 bls. 1st quality kraft pulp.

National City Bank, Oscar Borgesson, Hernosand, 3900 bls. dry sulphite pulp.

J. Andersen & Co., Oscar Borgesson, Hernosand, 11,082 bls. sulphate pulp.

Bulkley Dunton Pulp Co., Oscar Borgesson, Stockholm, 280 bls. prime bleached sulphite pulp; 1095 bls. prime extra strong bleached sulphite pulp; 1000 bls. prime bleached sulphate pulp.

Gottesman & Co., Inc., Oscar Borgesson, Stockholm, 300 bls. viscose pulp; 800 bls. prime bleached sulphate pulp; 1525 bls. prime extra strong bleached sulphite pulp.

Price & Pierce, Ltd., Uddeholm, Gothenburg, 750 bls. wet sulphite pulp.

WOODPULP BOARDS

Jay Madden Corp., Vretaholm, Hango, 233 bls. 1910 rolls (solid white), 554 tons.

FOR SALE

1—160″ Fourdrinier equipped with Sandusky Suction Couch, all ball-bearing equipped, with Yankee Dryer 8 ft. dia., 160″ face, also 8 Dryers 48″ dia., 160″ face. Will sell together or separate.

OSBORNE PAPER MILL EQUIPMENT CORP.

FULTON, N. Y. **M-22**

Inspectors find the Snow-White Sheets

Cut CRISP and CLEAN

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... with

SIMONDS PAPER KNIVES

Simonds Steel Mills and Simonds Controlled-Conditions Plant have teamed together to produce a paper knife that's unmatched in hardness and temper. These Red-Back Knives are made of special Simonds S-301 Steel... precision-ground with a slight concave in the face, and with taper from back edge to start of bevel. This gives each knife the face-clearance of a scissor-blade... preventing face-drag against the stock and giving cleaner cuts of hairline accuracy. Smooth speed in operation is maintained by Simonds famous mirror-finish.

Get Simonds S-301 Paper Knives from your distributor. They will reach you in perfect cutting condition, packed as shown, with the superkeen edge literally "floating in air." *Order now.*

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Southland Would Buy Forest for Pulp

(Continued from page 7)

Charlton continued:

"Let us dispel once and for all the question of the ability of the South to manufacture standard quality newsprint. We still hear the doubt manifested up North that Southern newsprint is inferior to the standard northern sheet. Our answer to this has always been 'ask the publisher who uses southern newsprint.'

"Regarding the future of newsprint in the South, and particularly the immediate tonnage possibilities, permit us to state that we know of 270,000 annual tons almost ready to come in or planned. We know where there are 1,200,000 acres untouched by pulpwood operations, west of the Mississippi and outside of our Leesville contemplated project, which, with the surrounding landowners, could support an additional 1,000,000 tons of newsprint per year.

"It is not difficult to visualize a production of 2,000,000 tons of newsprint in the South. What is more all of this production will be low cost production paper, competitive with not the average but the best Northern mills."

PAPER EXPORT

IS A FULL TIME JOB!*

AND OUR ORGANIZATION IS GEARED TO DO THE JOB

For over 40 years the name *de Vries* has been associated with paper among buyers in all world markets.

For over 40 years the name *de Vries* has been synonymous with the export sales of leading paper mills.

E. de Vries Company

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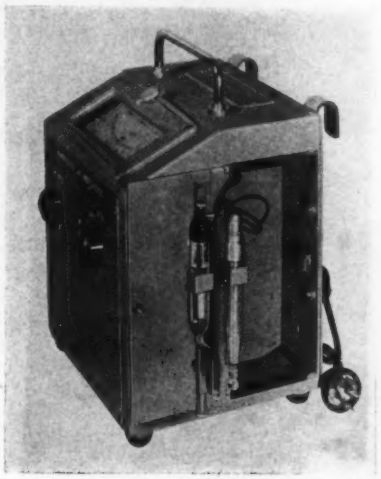
Cambridge Instrument Offers Direct-Reading pH Meter

NEW YORK—Cambridge Instrument Company, 3702 Grand Central Terminal, has introduced a new industrial model direct-reading pH Meter. In addition to the usual bench or table applications in measuring the acidity or alkalinity of sample test solutions, this new meter can also be used as a production instrument for continuous indication directly on processing operations with the meter located at a considerable distance from the electrodes, if desired. Hooks on the back of the sturdy metal case permit its suspension over a vat or tank, mounting on a wall,



CAMBRIDGE DIRECT-READING pH METER
The electrode assembly is an integral part of this new direct-reading pH Meter. Mounted on the inner side of the door of a compartment in the meter's case, the electrodes are out of the way and protected from accidental damage when the meter is being carried about the plant or is not in use. The instrument can be left "plugged in" to any A. C. outlet, merely opening the door makes it ready for instant operation without waiting through a warm-up period.

or hanging from a rack. Overall accuracy is .10 pH, range 0 to 14 pH. Line-operated from any 110 volt, 50 or 60 cycle A. C. outlet, the instrument is specially designed and ruggedly built.

Compact in size—7" x 8½" x 11¼"—and weighing only 10 lbs., the instrument is conveniently portable. The electrode assembly is an integral part of the meter and is mounted on the inner side of the door of a compartment in the case; out of the way and protected from accidental damage. Opening the door brings out the electrodes ready for use. The glass electrode is completely shielded to eliminate electrostatic interference and can be used directly in grounded solutions. Compensation is automatic for variations in solution temperature from 0° to 100° C., and for changes in ambient temperature. A voltage regulator corrects for line-voltage fluctuations from 100 to 130 volts.

EXPORT

Today, in many parts of the world, there are permanent, well-stabilized markets in urgent need of the paper and board produced in this country.

Export your products and realize an increased profit while establishing your place in this rapidly expanding, permanent field.

Credit risks . . . . . ?

Forget it when your product is exported through our export department, because The La Boiteaux Co. assumes all credit risks and arranges all of the necessary details.

Write La Boiteaux today for a prosperous future tomorrow . . . export.

LARGEST DISTRIBUTOR OF BOXBOARD IN THE UNITED STATES

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Taber Instrument Offers Three New Accessories

NORTH TONAWANDA, N. Y. — Three new accessories developed for use with the Taber abraser in wear-testing a wide range of materials have been developed by Taber Instrument Corporation. The first, the interval timer, is an electrical device which enables research laboratory personnel to control operating time of abrasion tests within prescribing limits, thereby eliminating

losses of tests resulting from accidentally running tests past the prescribed end point and enabling testing executives to concentrate on other work while the abraser operates.

Second is the duplex refacing stone, a development designed for refacing calibrase-type abrading wheels that provides greatly improved control of wheel surfaces and assures more dependable standardization of wheels, conditions which may be reflected in test results. Replacing the abrasive-coated paper discs formerly supplied for this purpose, it also gives greater economy in use.

Third is abraser drymount, a dual-coated adhesive sheet that simplifies and speeds preparation of thin, flexible fabrics or other similar materials for wear-testing. It "anchors" the specimen to metal or cardboard backing to prevent wrinkling or buckling of sample during test.

Grinnell Acquires Hoffmann As Milwaukee Branch

PROVIDENCE, R. I. — Grinnell Company, Inc., manufacturer and national distributor of a complete line of piping products, has acquired the B. Hoffmann Manufacturing Company of Milwaukee, Wis. The new branch, located at 1819 West St. Paul Ave., Milwaukee 3, Wis., will be known as the B. Hoffmann Manufacturing Company, Division of Grinnell Company, Inc., and will serve the southern section of Wisconsin, formerly handled by Grinnell Company out of Chicago.

T. R. Horan, associated with the Grinnell Company since 1920, has been appointed branch manager. His 27 years' experience in the piping field in Chicago, Washington, and Providence, eminently qualify Mr. Horan to render assistance to customers in the Milwaukee area. B. Hoffmann, Jr., president of the B. Hoffmann Manufacturing Co. since 1914 and a well-known figure in Wisconsin business circles will serve as consulting manager of the new branch. On June 1, A. E. Gauslin, Milwaukee manager of the Fire Protection Division of the Grinnell Company, will move his offices from their present location, 1116 First Wisconsin National Bank Building, to the new branch location.

New Buyer Seeks Norwood Plant

NORTHAMPTON, Mass. — Among the several prospective purchasers of the bankrupt Norwood Engineering Company, manufacturers of paper-making machinery, is a New Jersey industry, it was learned here as a petition to sell the assets of the company, filed by Atty. Luke F. Ryan, trustee for the firm, was allowed by Bankruptcy Referee Walter L. Stevens at a hearing in the courthouse.

It is possible that the transaction may be consummated at the next scheduled hearing to be conducted before Referee Stevens, at which time continued claims against the bankrupt concern will be taken up.

Many claims against the company were allowed by the referee including one submitted by the Northampton Electric Lighting Company slightly in excess of $1,200. An approximate similar number of claims were continued and no new claims were filed.

Assets of the firm have been listed at $155,000 and the petition, which does not state the name of the prospective buyer, was brought to compromise a controversy between the bankrupt and the Krock Brothers of Worcester, who are in control of the Norwood plant.

F. & P. Augments Booklet On Flowrator Equipment

HATBORO, Pa. — A new bulletin, greatly augmented, describing Flowrator instruments for measuring flow rate of liquids and gases has recently been released by the Fischer & Porter Company. This literature includes elaborate descriptions and illustrations of instruments, both assembled and disassembled. Numerous new accessories are shown, including a horizontal line adapter which makes it possible to insert Flowrator meters as easily in horizontal runs as they previously could be inserted in vertical pipes. Details of front and rear panel mounting, rear lighting arrangements, steam heating coils, and alarm devices are among the items included.

Cleveland Container Closes Plant One

OGDENSBURG, N. Y.—Cleveland Container Company has suspended operations at its No. 1 plant here for an indefinite period, G. W. Mulder, resident manager, announced. Operations at plant No. 2 are not affected.

G.E. Improves Design of Low-Speed Synchronous Motors

SCHENECTADY — To meet the needs of industries such as the pulp and paper industries requiring splashproof synchronous motors, the General Electric Company has redesigned its line of low-speed synchronous motors to include splashproof construction.

Simple design of end-shield covers makes it easy to remove and assemble them when inspecting the motor.

The pedestal bearings are outside the housing.

The new frame construction saves floor space as it has louvered openings for the side air discharge instead of the flared-skirt type of opening. The conduit box is included in the frame structure of the motor to protect it from splashing liquids.

An inspection window is provided in the air chute for viewing the brush holder and collector without removal of the covers.

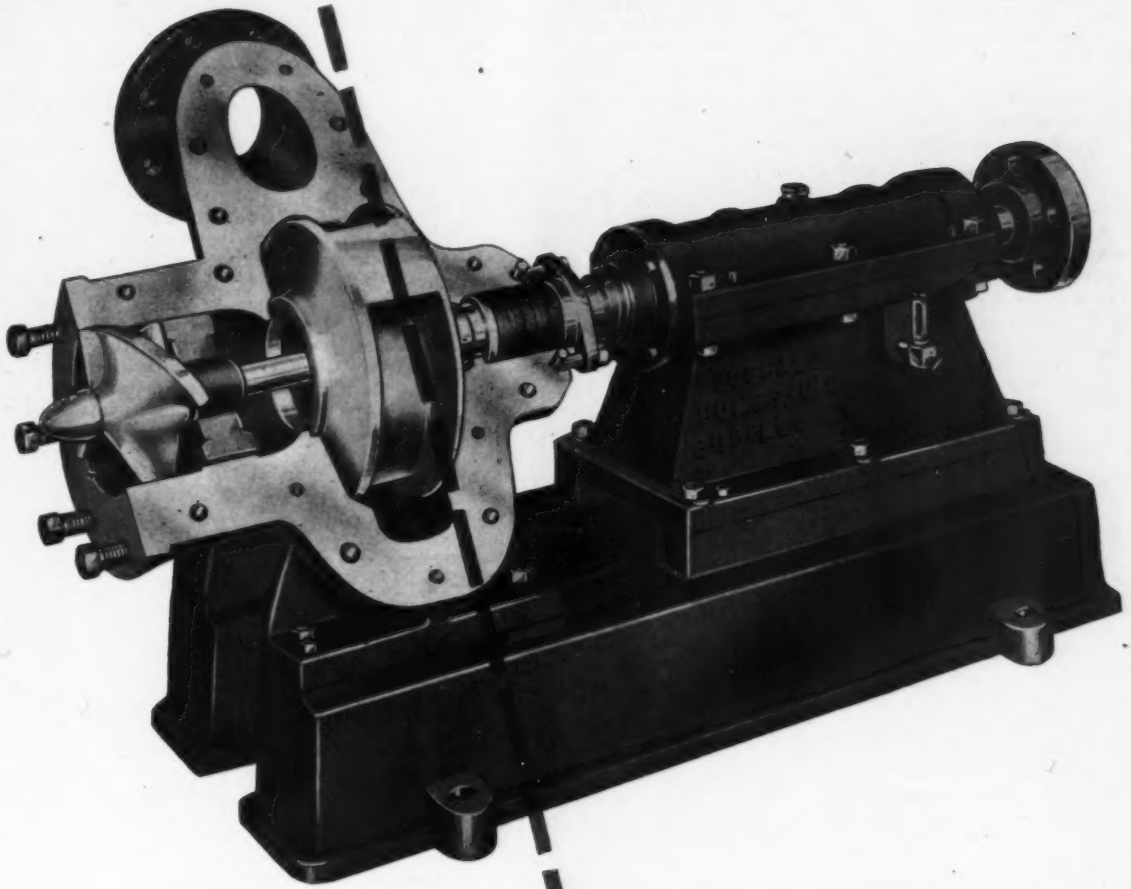
Egan Manufactures Converting Equipment

BOUND BROOK, N. J.—Frank W. Egan & Company, organized in October 1946, to act as consultants and machine designers for the paper converting industry, has found that the companies they serve asked them to manufacture, in addition to designing the paper converting machinery. The result is that Frank W. Egan & Company has booked a number of orders for treaters, crepers, printers, saturaters, laminaters, winders, air drying systems, and other types of paper converting equipment.

Lawson Shows Features Of Its New Cutter

NEW YORK — A six-page illustrated brochure has been issued by E. P. Lawson Company showing the features of the new Lawson "38" Paper Cutter. Close-up photographs illustrate in detail the new safety features, fluorescent floodlight, closed knife bar slot, and motor drive design. The specifications are listed as are concrete data showing why the Lawson "38" offers increased safety, greater accuracy, stepped-up production, and longer life.

"DS" is first choice in modern mills



Easy to see why the Buffalo "DS" line is so popular in up-to-date mills. In the first place, it's a husky line—built with plenty of metal where it's needed. Look at the shaft, the thick section impeller, the heavy casing.

No chance that THIS pump will be overloaded, that the job will be too much for it. The screw in the inlet starts stock moving in the right direction, breaks up lumps, helps the impeller.

And second, when inspection is desirable, take a few bolts out of the casing cap and top half of the suction connection, and lift off the whole top! No piping to disconnect—and complete access to rotor and entire inlet.

We have been building stock pumps for a good many years. There are hundreds of Buffalo Pumps in service today. This is the BEST stock pump that we have ever offered and mill men like it! Write for Bulletin 953 which gives complete details.

BUFFALO PUMPS, INC.
159 MORTIMER ST. BUFFALO, N. Y.
Canada Pumps, Ltd., Kitchener, Ont.

"Buffalo" DIAGONALLY - SPLIT PAPER STOCK PUMPS

Cullen Interprets International Policies

(Continued from page 10)

plained in our annual report. In this connection I call your attention to the fact that without capital stock financing we have reduced our funded debt from $64,060,000 as of December 31, 1938, (made up of many issues) to $18,000,000 at the present time in one issue and of this issue at least $3,000,000 will be paid during the current year. Annual interest charges have been reduced from $3,598,000 in 1938 to a present annual rate of $360,000.

"We have described our construction program for you in our annual report. As we told you we have set aside an amount of cash which we believe will be sufficient to carry it to completion.

"You should note that we have elected up to the present not to embark on the construction of any new mills. Construction costs today are more than double what they were before the war and we do not feel that over a long period of years we would be able to earn a satisfactory return on any investment in a new mill made at such costs. It seems to us extremely unlikely that demand or the present price level for our products will remain indefinitely at today's levels.

"On the other hand we have taken steps to increase our output. It is far more economical, where possible, to increase capacity at existing plants than to build new mills. Therefore we have elected to bring our existing plants up to the highest degree of efficiency. By so doing we will increase the capacity of those plants materially and on an economic basis.

"As to our policy for the future, this will depend on construction costs and the demand for our products which develops in the months and years ahead.

"Earnings for the first quarter of 1947 are at the highest level ever attained by your company. Our operating earnings for this period after depreciation and income taxes amounted to $16,160,540. From this amount we deduct $4,500,000 covering part of the cost of completing payment for past service benefits under our employees retirement plans, an item which I will explain in greater detail in a moment. After this deduction, our net profits amounted to $11,660,540 or approximately $3.21 per share on the outstanding Common stock after deducting preferred dividends.

"A brief discussion of these earnings may help to give you a clearer picture of our general situation. The earnings are gratifying—but to fully understand them you must take into consideration conditions existing during the quarter and subsequently.

"During this quarter we operated substantially at capacity—under exceptionally favorable operating conditions and at satisfactory prices. We cannot expect that these favorable conditions will continue indefinitely.

"We are in the midst of labor negotiations for the coming year and will undoubtedly agree to wage increases which will raise our costs substantially. We expect to absorb this increased cost without any general price increase.

"Subsequent to the first quarter changes have been made in our price schedules, the net effect of which will be a material reduction in net profits.

"For many years I have been discussing with you our dividend policy and the gist of what I have said is that dividends would be paid when the company was in such financial condition as to justify payment. That pledge has been fulfilled. The Common stock is now on a $3 per share annual basis.

"It may occur to some of you to ask why we can't pay more. This is not an unreasonable question and it may be that we can increase our dividends as time goes on. But let me tell you some of the things that I think should be taken care of before we should feel justified in doing this.

"In the first place we will have to increase the amounts invested in Accounts Receivable and Inventories.

"I would like to assure you right here that our inventories are not now excessive and we do not propose to let them become excessive. We have only working amounts of finished goods on hand and are actually short in many of our raw materials, particularly chemicals. The unit prices of our inventories are well below present replacement values. However, we are establishing reserves for possible future inventory price declines that should protect the company against any future decline in price levels that can be reasonably foreseen.

"In some fields it is considered good policy to borrow money and then try to earn more than the interest and amortization costs. This works out well in good times but in bad times it often produces bankruptcies. I look forward to the time when I can tell you that your company has no interest bearing debt. It may be possible to make that announcement by the end of this year.

"These policies will not jeopardize our present dividend policy. If all these things can be accomplished we will have a company whose financial position is unassailable. Furthermore, the likelihood of regular future dividends will be greatly enhanced.

"The full cost of all past service benefits under the employees retirement plans both in the United States and Canada have been paid. After making these payments, the future cost of continuing these plans is of course greatly reduced. Based on present rates of operations and on wage scales as of March 31, 1947, we estimate the future cost of maintaining these plans at $1,250,000 per year. This figure does not include the cost of retirement pensions which may become payable under the employment contracts which the company has with a few of the principal executives who are not entitled to participate in the general retirement plans.

"At a time when general labor conditions have been chaotic and long and costly strikes have been prevalent in so many industries we are proud to say that except for one minor incident in one small converting plant we have experienced no trouble with our employees. We have tried to understand their problems and do our best to help meet them. They in turn have been most cooperative in their attitude. We deeply appreciate this. I think it is no exaggeration to say that this spirit of cooperation between our employees and our management is one of the most important factors in the conduct of our business."

TENAX
"TENAX FELTS ARE TOUGH"
The cost of your felts per ton of paper is less when you specify TENAX FELTS
There are uniform Tenax Felts for every size machine and every grade of paper. They cut your production costs, give you trouble-free operation, raise your profit margin.
Serving the paper industry since 1891
LOCKPORT FELT COMPANY · NEWFANE, NEW YORK

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, May 21, 1947.

A carryover of the wartime practice of producing high grade papers at high prices, to the practical exclusion of low grade products, finds the industry faced with a paradox to end all paradoxes! Certain types of low grade papers are so scarce that available supplies are being sold at prices above those quoted for the better grades. True, this is only a temporary condition, and concerns only a very small segment of the industry. But have you tried to buy B, C or D grades of free sheet book paper lately? Most mills have not resumed production of these grades as yet. Some of those that have are selling their product at reasonable prices; others are taking advantage of an upsidedown market. While this condition does not represent a trend within the industry it does point out what can happen to a market when a particular demand is ignored. . . . First quarter earnings for a majority of paper and paperboard companies broke all previous records, but such new records are no criterion for the balance of the year. During the first quarter most mills were operating at capacity or near capacity and selling their product at top prices. While demand will probably keep mills operating at capacity, there is no real indication that present price levels will be maintained throughout the balance of the year. With labor costs rising, construction costs doubled, pulpwood and wood pulp prices up, paper and board producers' earnings are expected to taper off as the year ends.

The index of general business activity for the week ended May 10 eased to 145.9 from 146.5 in the previous week, compared with 124.3 for the corresponding week in 1946. The index of paperboard production rose to 187.6 from 183.9 in the previous week, compared with 173.9 for the corresponding week in 1946.

Paper production for the week ended May 10 was estimated at 107.0 percent, compared with 107.5 for the preceding week, with 102.8 for the corresponding week in 1946, with 85.4 for 1945, with 87.6 for 1944, and with 91.1 percent for the corresponding week in 1943.

Paperboard production for the week ended May 10 was 101.0 percent of capacity, compared with 102.0 percent for the preceding week, with 97.0 for the corresponding week in 1946, with 94.0 for 1945, with 95.0 for 1944, and with 96.0 percent for the corresponding week in 1943.

Demand for paper and paperboard products is still high in comparison to prewar levels but there is a definite easing in sight for shipping containers, folding cartons, corrugated cartons and paperboard. Consumers report they are able to obtain all the shipping containers they want delivered in from 30 to 60 days. Easing of container and board supplies are attributed to manufacturers having passed peak levels in packaging of finished products for household use, and have tapered off on the number of containers needed on monthly schedules. Other factors involved include a halt in speculative buying to protect future production; improved stocks, with some companies reporting lower levels of back orders; and improvement of mill schedules on which paperboard is set aside. . . . Lower backlogs are enabling carton and box companies in the New York area to improve their service to customers. These concerns are currently interested in obtaining new accounts and prospective buyers are being solicited for business. Mills are still allocating supplies to paper merchants, but with buyers becoming more critical merchants now have a selling job to keep their stocks moving.

Newsprint stocks are steady with newspapers reporting a 29 days' supply at the end of April, the same number of days reported for the end of March. . . . Meanwhile, E. A. Charlton of New York has advised a special House committee to look to the deep South, rather than Alaska, for new newsprint and paper supplies. Charlton believes the experience of the United States Forest Service in wood plantations in the South indicated the advisability of further studies in that area. . . . The Southland Paper Mills of Lufkin, Texas, are in favor of legislation to allow the Forest Service to dispose of the Davy Crockett National Forest near Lufkin. . . . The National Park Service is opposed to commercialization of national park areas. . . . Any attempt to reduce prices of Canadian newsprint may result in the diversion of wood pulp to rayon and other more profitable uses according to Canadian interests. Prices must remain high enough to support new venture capital or to allow for expansion of the present newsprint facilities in Canada. Current prices of newsprint would have to be upped $10 to $20 to attract new capital, thus supporting present Canadian newsprint prices is viewed as an economic necessity. . . . Representatives of the pulp and paper industry in Canada emphasize that inventories on hand and the possibility of a fluctuating demand make it impossible to determine whether newsprint producers will be able to meet consumer demands this year. . . . Last year Canadian newsprint companies produced 4,135,978 tons of newsprint and even greater production has been predicted for this year.

Waste Paper

Mills are currently using more than 110,000 tons of waste paper every week, and inventories are well below the prewar average. Paper mills seem more interested in obtaining improved qualities of baled waste paper than they are in securing lower prices.

Hard white envelope cuttings are maintaining their $90 to $120 range, while soft white shavings stay at $65 to $105 for the various grades. No. 1 white ledgers have not eased from their $70 to $80 level.

Rags

Mill demand for new domestic cotton cuttings remains steady with light silesias featured at around $7.50 per 100 pounds delivered plus dealer's commission. Blue overalls stay around $7.75 and unbleached fancy shirts about $4.50 to $5. White shirts are at their usual $11.50 to $12 mark While washables are firm at around $4. Old domestic cotton rags continue to feature No. 1 whites repacked at $5 and blue overalls at $3.75.

Some activity is reported in new foreign cotton cuttings with No. 1 bleachable khaki at $7 to $7.50, and unbleachable khaki $6.25 to $6.75. Light prints are $8 to $10 and new dark cuttings $6. Old foreign market offers dark cottons at $3.75 to $4. Checks and blues $4 to $4.25 and Dutch blue cottons at $5.25 to $5.50.

Old Rope and Bagging

Old rope market continues its steady pace with domestic Manila rope $5.75 to $6.50; jute strings $4.50 to $5 and No. 1 sisal strings $5.50 per 100 pounds f.o.b. New York.

Foreign gunny at $4.75 to $5 for the No. 1 grades is beginning to show renewed activity. The domestic market features No. 1 gunny at $4.25 to $4.50. Heavy wool tares are around $4.75.

New Waldron Mechanical Handling Bulletin

NEW BRUNSWICK, N. J.—John Waldron Corporation has published Mechanical Handling Bulletin 120. This bulletin has been prepared to meet the growing need for general information concerning the mechanical handling of paper, cloth, artificial leather, transparents and other materials that are to be processed in web form. The bulletin is fully illustrated and contains references to the many factors involved, such as equipment for Unroll, Tension Control, Converting, Festooning, Conveying, Guide Winding, etc.

PRICES

With the elimination of price controls on paper, pulp, rags and other materials, the quotations given below once more become indicative of trends in an open market. At the moment they can be of little more, for, while some volume business still is being done under contract at the figures given below, fluctuations representing special conditions are too varied and too frequent to permit prices to be given as representing a wholly stabilized market.

Paper

(Delivered New York)

Standard News, per ton—
Roll, contract ....$84.00 to $90.00
Sheets .....103.00 " 109.00

Kraft—per cwt.—Carload Quantities

Zone A, Delivered
40 lb. base weight

Superstandard Wrapping	$7.00	to	—
No. 1 Wrapping...	6.50	"	6.75
Standard Wrapping	6.00	"	6.25
Standard Bag	5.75	"	6.25

Tissues—Per Ream 24x36 (480) 10 lb. Zone 1.

Wh. No. 1 Frd.....	1.35	to	1.65
Wh. No. 1 M. G....	1.35	"	1.65
Wh. No. 1½.....	1.20	"	1.45
Wh. No. 2	1.30	"	1.55
Wh. Anti-Tar	2.75	"	4.25
Kraft Unbl.	1.45	"	1.85
Manila No. 2	1.25	"	1.45

Toilet—Per Case of 100 rolls—1 M Sheets.

Unbleached	4.47	to	5.50
Bleached	6.50	"	—

Paper Towels—Per Case of 3750—Zone 1.

Wh. C. fold 11x13½	4.39	to	4.80
Br. Sgl. fold 10 in.	2.67	"	3.00
Br. M'tif'd 9½x14¾	3.78	"	4.15
Br. M'tif'd 9½x9¾ .	2.67	"	3.00

Manila—per cwt.—C. l. f. a.

No. 1 Jute.....11.25	@	—	
No. 1 Manila 35 lb.	6.00	"	7.00

Boards, per ton—

News *75.00	@	81.50	
Chip *73.00	"	77.50	
Sgl. Mla. L1 Chip*89.00	"	92.50	
White Pat. Coated*101.50	"	110.00	
Kraft Liners 42 lb.*84.00	"	95.00	
Binders Boards .. 94.00	"	126.00	

*Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following prices are representative of distributors' resale prices, all deliveries in Zone 1: Rag Content Bonds and Ledgers—

White, Assorted Items
Bonds, per cwt.

	Carton	4 C't'n	Ton
100% Rag Ext. No. 1	$55.00	$50.00	$48.00
100% Rag	46.50	43.00	41.25
75% Rag	35.00	32.50	31.50
50% Rag	31.50	28.75	27.50
25% Rag	28.00	25.50	24.50

Ledgers, per cwt.

100% Rag Ext. No. 1	$54.25	$50.00	$48.00
100% Rag	46.25	42.50	40.75
75% Rag	36.00	33.25	31.75
50% Rag	31.00	28.00	27.00
25% Rag	27.25	24.75	23.75

Sulphite Bonds and Ledgers—White, Assorted Items
Bonds, per cwt.

No. 1	$18.75	$16.25	$15.50
No. 2	17.00	15.25	14.50
No. 4	16.00	14.50	14.00

Ledgers, per cwt.

No. 1	$17.00	$17.00	$16.35
No. 2	17.75	16.25	15.50
No. 4	17.00	15.00	14.25

Free Sheet Book Papers—White, Cased Paper

(Per cwt.)	Case	Ton
No. 1 Glossy Coated...	$19.40	$18.60
No. 2 Glossy Coated...	18.15	17.35
No. 3 Glossy Coated...	17.65	17.00
No. 1 Antique (Water marked)	$14.90	$14.25
No. 2 Offset	15.35	14.70
A Grade E. F.....	13.90	13.30
A Grade S. & S. C....	14.40	13.70
B Grade E. F.....	Nominal	
B Grade S. C.....	Nominal	
C Grade E. F.....	Nominal	
C Grade S. C.....	Nominal	
D Grade E. F.....	Nominal	
D Grade S. & S. C....	Nominal	

Wood Pulp

Domestic mill prices delivered with former OPA freight allowances.

	Per Short	ADT
Groundwood	$75.00 to	$80.00
Unbleached Sulphite..	117.00 "	—
Bleached Sulphite ..	121.00 "	125.00
Bleached Soda	115.00 "	120.00
Unbleached Kraft	112.50 "	120.00
Southern Kraft	90.00 "	102.50

Canadian mill Prices delivered with freight allowances unless otherwise specified:

	Per Short	ADT
Select Unbleached Kraft (no freight allowance)	115.00 "	—
Unbleached Sulphite..	115.00 "	—
Glassine Unbleached Sulphite (no freight allowance)	112.00 "	—
Bleached Soda	105.00 "	115.00
Groundwood	75.00 "	80.00
Sideruns Pulping News	75.00 "	80.00
Hardwood and Specialty Grades	Nominal	

Swedish Quotations
Ex. dock, New York

	Per Short	ADT
Bleached Kraft .....$150.00 to		156.00
Bleached Sulphite ...	151.00 "	158.50
Unbleached Sulphite..	121.00 "	131.00
Unbleached Kraft	116.00 "	126.00

Finnish Quotations
Ex. dock, New York

	Per Short	ADT
Bleached Sulphite	$165.00	
Unbleached Sulphite	132.50	
Unbleached Sulphite (special grade)	137.50	
Unbleached Sulphate	132.50	
Unbleached Sulphate (special grade)	159.00	

New Domestic Cotton Cuttings

(Prices delivered Mill Plus Dealer's Commission)

White Shirt .....$11.50 to		$12.00
Light Silesias	7.50	
Unbleached Muslin ...	11.50 "	12.00
White Back Blue Overalls	8.25	
Blue Overalls	7.75	
Unbl. Fancy Shirt....	4.50 "	5.00
Light Percales	5.50 "	6.00
Light Prints	5.25 "	5.95
Washables	4.00	
Bleachable Khaki	5.50 "	6.00
Unbleachable Khaki ..	5.00 "	5.50
Cottonades	4.50 "	5.00

Old Domestic Cotton Rags

(F.O.B. Shipping Point Plus Dealer's Commission)

	Per 100 lbs.
No. 1 Whites Repacked.....	$5.00
No. 1 Whites Miscellaneous..	4.25
No. 2 Whites Repacked	4.00
No. 2 Whites Miscellaneous..	3.50
Blue Overalls	3.75
Thirds and Blues Repacked.	3.00
Thirds and Blues Miscellaneous	2.50
No. 1 Roofing Rags.....	2.20
No. 2 Roofing Rags.....	2.10
No. 3 Jute Bagging.....	2.00
No. 4 Brussels and hard back carpets	2.00
No. 5A Roofing Rags.....	2.00

New Foreign Cotton Cuttings

(Prices delivered Mill)

	Per 100 lbs.	
New Dark Cuttings....	$6.00 to	—
New Mixed Cuttings...	6.50 "	—
Light Silesias	9.00 "	10.00
Light Flannelettes	8.00 "	9.00
New White Cuttings ..	13.00 "	15.00
Fancy Shirt Cuttings...	9.00 "	10.00
Light Prints	8.00 "	10.00
Bleachable Khaki, No. 1	7.00 "	7.50
Unbl. Khaki, No. 1....	6.25 "	6.75

Old Foreign Rags

(F.O.B. New York)

	Per 100 lbs.	
No. 1 White Linens...	$14.00 to	16.00
No. 2 White Linens...	12.00 "	13.00
No. 3 White Linens...	8.00 "	9.00
No. 4 White Linens...	8.00 "	9.00
No. 1 White Cottons...	10.00 "	12.00
No. 2 White Cottons...	8.00 "	9.00
No. 3 White Cottons...	6.50 "	7.00
No. 4 White Cottons...	5.00 "	5.50
Extra Light Prints...	7.50 "	8.00
No. 1 New Light Prints	6.25 "	6.75
Med. Light Prints.....	5.25 "	5.75
Dutch Blue Cottons....	5.25 "	5.50
Checks and Blues.....	4.00 "	4.25
Linsey Garments	4.50 "	5.00
Dark Cottons	3.75 "	4.00
Old Shopperies	3.25 "	3.50
New Shopperies	3.25 "	3.50

Bagging

(Prices to Mill, f.o.b. N. Y.)

	Per 100 lbs.	
Foreign Gunny, No. 1..	$4.75 to	5.00
Domestic Gunny, No. 1	4.25 "	4.50
Light Wool Tares.....	4.50 "	4.75
Heavy Wool Tares.....	4.75 "	5.00
Bright Bagging	4.25 "	4.50
Foreign Manila Rope...	6.00 "	7.00
Domestic Manila Rope	5.75 "	6.50
Jute Strings	4.50 "	5.00
No. 1 Sisal Strings ..	5.50 "	6.00
Mixed Strings	1.75 "	2.50

Waste Paper

Prices to Mills
(Dollars Per Ton)
F.o.b. New York, Baled

No. 1 Hard White Envelope Cuts, one cut .....$100.00@$120.00	
No. 1 Hard White Envelope Cuts ...	90.00 " 100.00
No. 1 Hard White Shavings, unruled..	100.00 " 110.00
No. 1 Hard White Shavings, ruled ...	80.00 " 90.00
Soft White Shavings, one cut	95.00 " 105.00
No. 1 Soft White Shavings	85.00 " 95.00
Soft White Shavings, Misc.	65.00 " 75.00
No. 1 Fly Leaf Shavings	55.00 " 60.00
No. 2 Fly Leaf Shavings	50.00 " 55.00
No. 1 Groundwood Fly Leaf Shavings	30.00 " 33.00
No. 2 Mixed Groundwood Fly Leaf Shavings	(nominal)
Mixed Colored Shavings	(nominal)
Mixed Groundwood Colored Shavings...	(nominal)
Overissue Magazines..	(nominal)
No. 1 Heavy Books & Magazines	40.00 " 45.00
Mixed Books	22.00 " 25.00
No. 1 White Ledger..	70.00 " 80.00
No. 2 Mixed Ledger, colored	60.00 " 70.00
New Manila Envelope Cuttings, one cut..	100.00 " 110.00
New Manila Envelope Cuttings	65.00 " 75.00
Extra Manilas	40.00 " 45.00
Mixed Kraft, Env. & Bag Cuttings	75.00 " 85.00
Kraft Envelope Cuttings	100.00 " 105.00
Triple Sorted, No. 1 Brown Soft Kraft.	60.00 " 70.00
New 100% Kraft Corrugated Cuttings ..	70.00 " 75.00
No. 1 Assorted Old Kraft	40.00 " 50.00
New Jute Corrugated Cuttings	27.00 " —
Old 100% Kraft Corrugated Containers.	(nominal)
No. 1 News.....	26.00 " 27.00
No. 1 Mixed Paper..	19.00 " 21.00
Box Board Cuttings..	23.00 " —
White Blank News...	75.00 " 80.00
Overissue News	(nominal)
Old Corrugated	28.00 " 30.00
Mill Wrappers	22.00 " 25.00

Twines

All Prices Nominal
(F. o. b. Mill)
(Soft Fiber)

Coarse Polished— India	.26	@	.29
Fine Polished— Fine India	.31	"	.35
Unpolished— Paper Makers	.20	"	.26
Tube Rope	.22	"	.27½
Wrapping	.26	"	.33½
Cotton	.70	"	—
(Hard Fiber)			
Mex. Sisal	.21	"	.24
Manila	.33	"	—
(Hemp)			
Polished Hemp	.63	"	—

PHILADELPHIA

Domestic Rags (New)

(F.O.B. Eastern Shipping Point)

Shirt Cuttings— New White No. 1..	.10½	@	.11
New White No. 2..	nominal		
Light Silesias	.07½	"	.08
Black Silesias, soft	.06½	"	.07
New Unbleached ..	.10½	"	.11¼
Washable Prints ..	.06½	"	.07
Washable No. 1....	.05	"	.05½
Blue Overall	.07½	"	.08
Cottons—According to grades— Washable Shredding	.03½	"	.04
Fancy Percales ...	.06¾	"	.07¼
New Black Soft....	nominal		
Khaki Cuttings— Unbleachable Cotton Cuttings	.05½	"	.06
Bleachable Cotton Cuttings	.06½	"	.07
Men's Corduroy ..	.05½	"	.06
Ladies' Corduroy ..	.05	"	.05½
Cottonades	.05½	"	.06

Domestic Rags (Old)

(F.O.B. Eastern Shipping Point)

White No. 1—Repacked	4.50	@	5.00
Mixed White	4.00	"	4.25
White No. 2—Repacked	3.50	"	3.75
Thirds and Blues— Miscellaneous	2.25	"	2.50
Repacked	2.75	"	3.00
Roofing Stock— Foreign No. 1.....	nominal		
Domestic No. 1....	2.00	"	2.05
Domestic No. 2....	1.90	"	1.95
Roofing Bagging ..	1.90	"	1.95
Old Manila Rope....	5.75	"	6.00

Bagging

(F.O.B. Eastern Shipping Point)

Gunny No. 1— Foreign	nominal		
Domestic	4.25	@	4.50
No. 1 Clean Bright— Sisal Strings	.04	"	.04½
No. 2 Clean Bright— Sisal Strings	.03	"	.03½
Sisal Jute	.02¾	"	.03
Scrap— No. 1	3.25	"	3.50
No. 2	1.75	"	1.85

Wool Tares, heavy	4.00	"	4.25
New Burlap Cuttings	6.00	"	6.50

Old Papers

(F. o. b. Phila.)

Mill Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	$100.00	@	$115.00
No. 1 Hard White Shavings, unruled	100.00	"	—
Soft White Shavings, one cut	90.00	"	95.00
White Blank News	60.00	"	65.00
Soft White Shavings	80.00	"	—
No. 1 White Ledger	75.00	"	80.00
Ledger, colored	60.00	"	65.00
No. 1 Heavy Books & Magazines	40.00	"	45.00
Overissue Magazines	nominal		
New Manila Envelope Cuttings	80.00	"	—
No. 1 Assorted Old Kraft	60.00	"	65.00
No. 1 Mixed Paper	20.00	"	—
Box Board Cuttings	20.00	"	—
Kraft Corrugated Cuttings	nominal		
Old Corrugated	30.00	"	35.00
Overissue News	40.00	"	—
No. 1 News	—	"	30.00

BOSTON

Old Papers

(F. o. b. Boston)

Mill Prices, Baled

No. 1 Hard White Shavings, unruled	7.00	@	8.00
No. 1 Hard White Shavings, ruled	7.00	"	8.00
Soft White Shavings, Misc.	6.25	"	6.50
No. 1 Fly Leaf Shavings	1.65	"	1.80
No. 2 Fly Leaf Shavings	2.00	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	1.25	"	1.50
Mixed Colored Shavings	2.50	"	2.75
New Manila Envelope Cuts, one cut	5.00	"	5.50
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	3.50	"	3.75
Mixed Kraft Env. & Bag Cuttings	3.75	"	4.00
Kraft Envelope Cuttings	3.75	"	4.00
No. 1 Heavy Books & Magazines	2.50	"	2.60
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	4.25	"	4.50
Groundwood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	3.50	"	—
No. 1 Mixed Paper	—	"	.95
Overissue News	1.50	"	1.75
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.50	"	—
Jute Corrugated Cuttings	1.07½	"	—
Paper Strings	2.25	"	2.50

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	—	@	4.75
Domestic	—	"	4.75
Sisal Rope No. 1	6.00	"	—
Sisal Rope No. 2	5.50	"	—
Mixed Rope	5.25	"	—
Mixed Strings	2.00	"	2.50
Transmission Rope—			
Foreign	(nominal)		
Domestic	3.00	"	3.50
Manila Rope—			
Foreign	(nominal)		
Domestic	6.25	"	—
Soft Jute Rope	5.00	"	5.25
Jute Carpet Threads	6.00	"	—
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	—	"	4.75
Domestic	—	"	4.87½
South America	5.25	"	—
Wool Tares—			
Foreign	4.50	"	—
Domestic	4.50	"	—
Aust. Wool Pouches	5.00	"	5.25
New Zealand Wool Pouches	5.25	"	5.50
New Burlap Cuttings	6.00	"	6.50
Heavy Baling Bagging	5.25	"	5.75
Paper Mill Bagging	3.50	"	3.75
No. 1 Roofing Bagging	1.75	"	—

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.07	@	.07½
Fancy Percales	.07½	"	.08
New White No. 1	.10	"	.11
New Light Flannelettes	.08	"	.08½
Canton Flannels, Bleached	.10	"	.11
Underwear Cutters, Bleached	.10	"	.11
Underwear Cutters, Unbleached	.11	"	.12
Silesias No. 1	.07	"	.08
New Black Silesias	.05	"	—
Red Cotton Cuttings	.05	"	—
Soft Unbleached	.11	"	.12
Blue Cheviots	.07½	"	.08
Fancy	.06	"	—
Washable	.06	"	—
Khaki Cuttings	.06	"	.07
O. D. Khaki	.07	"	—
Corduroy	.03½	"	—
New Canvas	.06¼	"	.06½
B. V. D. Cuttings	.10	"	.11

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—
Miscellaneous	3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.50
Thirds and Blues,			
Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	2.00	"	—
No. 2	1.90	"	2.00
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.35	"	—
Quality B	1.20	"	—
Quality C	.95	"	—
Old Manila Rope	6.00	"	—

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

Mill Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	$110.00	@	$120.00
No. 1 Hard White Shavings, unruled	105.00	"	115.00
No. 1 Soft White Shavings	80.00	"	95.00
No. 1 White Ledger	55.00	"	65.00
No. 1 Heavy Books & Magazines	40.00	"	43.00
White Blank News	43.00	"	49.00
Mixed Kraft Env. & Bag Cuttings	75.00	"	85.00
No. 1 Assorted Old Kraft	45.00	"	55.00
Overissue News	28.00	"	—
No. 1 News	25.00	"	—
No. 1 Mixed Paper	20.00	"	—
Old Corrugated	36.00	"	—
Mill Wrappers	22.00	"	—

MARKETS

BLANC FIXE—Demand steady, deliveries slow, supplies fair to good. Pulp is currently quoted at $55 per ton, in barrels, car lots, at works; and $60 less car lots same basis.

BLEACHING POWDER—Supplies adequate to meet current demands. Shipments sometimes delayed. Quotations are unchanged. Prices on bleaching powder range from $2.75 to $3.75 per 100 pounds.

CASEIN—Current prices on processed acid precipitated casein are reported around 27 to 30 cents per pound for domestic grades and 28 to 34 cents for imported grades f. o. b. shipping point.

CAUSTIC SODA—Demand continues to exceed output with little relief seen for domestic or export markets. Solid caustic soda is reported at $2.50 per 100 pounds; flaked and ground offered at $2.90 to $3 per 100 pounds, car lots, at works.

CHINA CLAY—Supply tight as demand continues heavy. Domestic filler clay is currently $8.50 to $9 per ton, car lots. Coating clay is $12 car lot and $16 less car lot. Imported clay is currently quoted at from $17 to $35 per ton, in car lots, export warehouse.

CHLORINE — Buffalo output off as demand reaches new levels. Lack of tank cars continues to hamper deliveries. Quotations unchanged. Chlorine is currently quoted at $2 to $3.50 per 100 pounds.

ROSIN—Gum rosin in drums, per 100 pounds, net, in yard New York, car lots, B, D, $10.80; E, F, G, H, I, K, M, $11.80; WG, $12.05; WW, $12.05. Wood Rosin, per 100 pounds, l. c. l. f. o. b. N. Y., B, $7.45; FF, $8.95; G, H, I, $10.25; WW, and X, $10.45.

SALT CAKE—Supplies show little improvement as demand continues to increase. Prices remain unchanged. Domestic salt cake is quoted at $20.00 to $26 per ton in bulk. Chrome salt cake is quoted at $16 per ton.

SODA ASH—Demand active as supplies continue short, previous orders filled. Contract orders prevail at the same high levels. Current prices, car lots, per 100 pounds, are as follows: in bulk, $1.08; in paper bags, $1.20; and in barrels, $1.60.

STARCH—Domestic demand absorb capacity production leaving little for export. Starch prices continue strong with the pearl grade quoted at $4.67 per 100 pounds; powdered starch at $4.78 per 100 pounds, car lots, Chicago.

SULPHATE OF ALUMINA — Fair supplies cover active demands. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.30 per 100 pounds, in bags, car lots, f. o. b. works. Iron free is quoted at $1.95 to $2.25 per 100 pounds, in bags at works.

SULPHUR—Plentiful supplies to meet active domestic and export demands. Annual contracts are quoted at $16 per long ton, f. o. b. mines; the price f. o. b. at Gulf Ports is $17.50 per long ton.

TALC—Domestic and French grades are moving in fair volume with prices steady. Domestic grades are currently quoted at from $16 to $30 per ton at mines; Canadian at $35 to $45 per ton. All prices in car lots.

DIGESTED

Apparent total consumption by United States publishers in April was 407,481 tons, an all-time high for that month, and 52,708 tons or 14.9 percent above April 1946. It was 32.1 percent more than the average for April in the five prewar years.

Apparent total stocks of all United States consumers decreased by 441 tons in April and amounted to 389,814 tons at the end of the month. Corresponding stocks at the end of April 1946 were 385,659 tons.

Total United States supply in the first four months of the year was 13 percent more than last year and 44 percent above the average of five prewar years. Shipments from Canada and Newfoundland in the first four months of 1947 represented 77 percent and 4 percent respectively of the total, the same percentages as in the corresponding period of 1946. Shipments from United States mills provided 18 percent of the total compared with 19 percent in the first four months of 1946. Imports from Europe, including an estimated amount of 1,000 tons in April were 1 percent of the total United States supply; there were none in the first four months of 1946.

Newspaper advertising linage in 52 United States cities for the first three months of 1947 was 16.1 percent greater than last year. Magazine advertising linage in the first three months of 1947 was 0.1 percent less than in 1946. Radio network billings in the first two months of the year were 4.5 percent lower than last year.—*Newsprint Association of Canada Summary.*

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1947		Corresponding Weeks—1946	
April 5	106.1	April 6	104.1
April 12	100.7	April 13	103.6
April 19	105.9	April 20	102.5
April 26	105.3	April 27	100.6
May 3 (Revised)	107.5	May 4	107.3
May 10	*107.0*	May 11	102.8

COMPARATIVE MONTHLY SUMMARIES

	1946		May	100.7	Oct.	106.4		1947
Jan.	94.7		June	104.6	Nov.	105.5	Jan.	102.1
Feb.	98.4		July	94.0	Dec.	97.0	Feb.	105.9
Mar.	104.4		Aug.	104.7			Mar.	106.1
Apr.	102.7		Sept.	101.3	Avg.	101.1	Apr.	*105.1*

COMPARATIVE YEARLY SUMMARIES

	1940	1941	1942	1943	1944	1945	1946	1947
Year to Date	85.7	91.7	102.2	88.9	88.2	88.3	100.2	*105.3*
Year Average	85.6	97.4	90.4	87.8	88.1	89.4	101.1	

PAPERBOARD OPERATING RATIOS†

Current Weeks—1947		Corresponding Weeks—1946	
April 5	102	April 6	99
April 12	96	April 13	101
April 19	102	April 20	101
April 26	100	April 27	95
May 3	102	May 4	101
May 10	*101*	May 11	97

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1946	90	91	100	99	94	97	89	99	96	100	99	92	96
1947	99	103	101	*100*									

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

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EDITORIAL

Paperboard Prospects

One reason why statisticians some times throw up their hands and wait until the results are in before they attempt any analysis of records is to be found in the picture that Norman F. Greenway, vice-president of the Robert Gair Company drew for his audience last week at the convention of the National Association of Credit Men. In the course of a long and able talk that explained the character, the diversity of use and demand, and the basic quality of the paperboard business, he went on to show that the present is a time for confidence, but a time also for caution.

Serving, as it does, a substantial slice of the nation's industrial picture, with the possible exception of heavy industry, the paperboard trade must watch for and interpret trends in the national picture. This necessity, just now, is sharpening the pencils of the best market analysts.

The present demand for folding boxes, said Greenway, is still in excess of the industry's ability to produce. True, in recent weeks there have been some adjustments in the backlog position, but analysis indicates that the customers who are asking that their commitments be either held up or cancelled are in the main the "Johnnie-come-latelies," in their particular industry or companies whose financial position never was of such strength to withstand either falling off in demand or weakening of their price structure.

A good authority, continued Greenway, has indicated that the strongest sales resistance is being met by manufacturers of the following items: 1. Cotton and Rayon dresses. 2. Silk hose. 3. Corsets. 4. Sweaters. 5. Beach Clothing. 6. Soft Woolens. 7. Costume jewelry. 8. Shirts. 9. Men's Sportswear. 10. Chenille bedspreads. 11. Razor blades, (many unknown brands). 12. Frozen foods. 13. Cosmetics. 14. Cigars.

Simultaneously, however, other members of the same industries are breaking sales records and spending tremendous sums in advertising, sales promotion and research. These cases represent companies making a good product, nationally known and fairly priced.

Speaking on the future for folding cartons, Greenway declared that some of the greatest growth in paperboard acceptance will be for the fabrication of folding cartons for tonnage products such as bakery goods, liquids, fresh fruits and vegetables, and items, such as meats, which go into refrigeration. Most of these commodities, of course, are already moving to some extent in paperboard and the experience has been so satisfactory that further growth in use seems guaranteed.

Another significant merchandising trend is toward greater visibility of contents. This move has been greatly furthered by efforts of the producers of cellulose acetate cellophane who have even gone as far as to secure one hundred per cent transparency by packing in bags.

The super market apparently is here to stay, Greenway added, and this has caused an enormous increase in the use of folding cartons. For example, many fresh fruits and vegetables and other commodities are being displayed in super markets in cellophane boats and trays, the latter being made of paperboard. The war also taught a great many shippers that paperboard was such a good substitute for unobtainable metal, glass and other critical materials that many of them are now continuing with paperboard and may never go back.

Blissful State

Speaking for all of the states to the south of it, although launching its observation from an impressive incident of local interest, West Virginia points to southern forest industries as the most promising field for development in the South. Wisely, its spokesmen, with sectional pride always looking for broader fields, yet take pride in the development of the kraft paper industry in southern areas, and urge that with diligent care the southern pine forests and coastal lands can be used to produce indefinitely just as cultivated fields produce crops.

Through the columns of the News and Courier, of Charleston in that state, the installation of some five million dollars worth of new machinery for manufacturing kraft paper is hailed, not only as an important plant extension but as an infusion of new productive capacity into the community. The extra hundred jobs that the new facilities will create are only one side of the benefit. There is also the enlarged market for pulpwood grown in South Carolina forests.

"Forest industries are the most promising field of development in the South," the News & Courier continues. "If intelligent methods are used, the coastal lands can produce pine trees indefinitely, the same as the cultivated fields produce crops. The pulp companies have endeavored to inculcate good forest management principles by example on their own lands. Private landowners should follow suit and harvest rather than mine the wood from their acres.

"Some day we hope to report that other new machinery is being installed for production of newsprint from Southern pine. In present circumstances, the paper companies find it to their advantage to make kraft rather than newsprint. As market conditions change, products will be adapted to them. The point to remember is that the future market and the future source of material are assured for the pulp mills if common sense be exercised by all concerned."

W. L. Cook

EDITOR

NOW, GENTLEMEN....

....LET'S DO A LITTLE COMPARING

We sat across the table from several superintendents of well-known mills out our way. We corresponded with others, some of them out on the coast. You know them well.

We asked the questions. They produced the answers—from carefully compiled records on ORR-CHEM performance. And because the figures are their figures, not ours, they should be doubly interesting.

Already 156 mills are using ORR-CHEMS. Already most grades are represented. So it is high time you also gave ORR-CHEM treated felts a chance to prove their case on your machines.

¶ Be certain of length and width measurements when you order.

"Felt started on the 1st, was taken off on the 15th. This is 14 days vs. our average of only 9 days. Still good enough to be used as press felt."

"Your treated, first press felt ran 18 days against average of 13 days. Weight, size and drainage O. K. Ordering more at once."

THE ORR FELT & BLANKET CO.
PIQUA, OHIO

PERFORMANCE

One of our larger board mills has already used several ORR-CHEMS. Their average felt cost per ton has been reduced from $1.21 to $1.04 per ton.

ANALYSIS

Based on your tonnage figures and a $.17 per ton saving, figure for yourself what such an economy could mean to you.

●

PERFORMANCE

ORR-CHEM felt ran 10 days on tissue and produced 457 tons at cost for felting of $1.20 per ton, or $550.23 total felt cost. The untreated felt ran only 7 days and the felt cost per ton stood at $1.70 when it came off. Boiled down, the ORR-CHEM saved $.50 per ton of production, or $228.50, on 457 tons produced—a handsome return on a $547.00 investment.

ANALYSIS

Using $.50 per ton as your saving, how would you have fared on felt costs? Again —figure it out for yourself.

ORR-CHEM

SECTION OF THE

TECHNICAL ASSOCIATION
OF THE PULP AND PAPER INDUSTRY

122 E. 42nd ST., NEW YORK 17, N. Y. Edited By R. G. MACDONALD, Secretary

Preservation of Straw in Ricks

Report of Joint Meeting of TAPPI Fibrous Agricultural Residues Committee and Chemical Preservative Manufacturers, April 1, 1947, Northern Regional Research Laboratory, Peoria, Ill.

By S. I. Aronovsky[1]

The purpose of this meeting, to find the best and most economical means for preserving baled straw stored in ricks and exposed to the elements for periods of 8 months to a year or more, was outlined by Dr. Aronovsky, presiding.

Dr. G. E. Hilbert, Director of the Northern Laboratory, welcomed the visitors and suggested that it might be desirable to have another meeting of this group in about a year to discuss the accomplishments in the intervening period. Dr. Hilbert also suggested the desirability of having a film prepared, possibly under the auspices of the strawboard industry, showing the best known methods of collection, preservation, and utilization of straw. This film, shown at farm group meetings, would be a valuable educational aid in working out the problems of handling straws and other agricultural residues.

Dr. E. C. Lathrop discussed the causes for decay of bagasse and straw, pointing out that this could be reduced or eliminated either by reducing the moisture content of the material or by adding a preservative toxic to the organisms which cause decay.

Mill Results

Mr. B. F. Stahl of the Terre Haute Paper Company reported on the preservation tests carried out at his mill in 1946 with Dowicide-G. This preservative was dusted on the flat tops of two ricks at a cost of $84 (16 cents per pound Dowicide-G) for one rick and $182 for the other. A third rick of similar size with no preservative treatment was used as a control. These stacks were composed of barn-dry straw when erected, having had little or no moisture on them from the time of harvest. From April 1, 1946, when the ricks were erected, until September they had received approximately 25 inches of rain. No quantitative estimates were made of the extent of decay. However, when walking on the control rick a man would sink about a foot into the top bales while the top bales of the Dowicide-G-treated ricks were firm underfoot. The second tiers of the treated ricks were decayed somewhat but not nearly as badly as those of the untreated ricks. Mr. Stahl stated that some of the black wire used to tie the bales treated with Dowicide-G had rusted through and broken. He also noted that chickens scratched around the untreated ricks but not around the treated ones. The treated straw had a "good clean odor." According to Stahl the $182 treatment gave better preserved straw than the $84 treatment, but the gain was not worth the $100 difference.

In October 1946 five ricks of 400 tons each were treated with Dowicide-G applied by spraying a wet dispersion of the chemical on the top tiers. The application consisted of about 550 pounds of Dowicide-G in 450 gallons of water at a cost of about $93.50 per rick. The actual time required for application was about 45 minutes per rick. Examination of the treated ricks just prior to this meeting indicated that the top tiers are still in good condition whereas considerable decay is evidenced in the top tiers of untreated ricks.

Mr. Smith of the Dow Chemical Company estimated that the straw loss in an untreated 400-ton rick would be $320 (20 tons at $16 per ton). Mr. Blandin stated that the cost would be approximately $180 to $200 per tier of bales. Mr. Stahl said that his company figures on a loss of 8% in a 400-ton rick. After some discussion it was agreed that the average loss of straw in a rick could be assumed to be equal to half of the three top tiers of bales, or one and one-half tiers.

Mr. Blandin gave the following reasons for a permanent rise in the cost of straw delivered to the mill: (1) increased production, requiring additional straw; and (2) a permanent replacement in some wheat areas by soybeans, requiring a longer hauling distance and therefore greater transportation costs. With the increased value of straw, cutting of the stubble and baling is done immediately after harvesting to avoid accumulation of weeds. All of these factors indicate that mills have to collect and store

[1] Member TAPPI; Chairman, TAPPI Fibrous Agricultural Residues Committee; In Charge, Pulp and Paper Section, Agricultural Residues Division, Northern Regional Research Laboratory, Peoria, Illinois.

larger amounts of straw during the harvest period and a moderate expenditure for preservation of this straw would be justified. Of the 25 ricks in storage at one of their mills, the top tiers and part of the second tiers are in a decayed condition. Assuming the loss of only one tier of 500 bales per rick, the total loss for 25 ricks amounts to about $5,500. Also, additional decay will occur during the spring and summer months before these ricks are torn down.

Preservation of the bottom tier of the ricks was not considered a serious problem. Stacking on a well-drained cinder-covered base causes no untoward decay of the bottom tier of bales.

A suggestion was made that partly built ricks might be covered during rainy periods to prevent impounding moisture. It was pointed out that owing to the labor costs of stacking baled straw and to the fact that there was only a short period during the year when this could be done, it was impractical to halt stacking during a rain even though a possible loss of straw might be entailed.

Mr. Olsen of Archer-Daniels-Midland Co., stated that they covered their flax straw ricks with 84-inch sisal-kraft paper with an overlap of 2 feet. The flax straw ricks are topped in a pyramid; the paper comes down over the eaves of the pyramid and is held down by chicken wire weighted with cement blocks. The chicken wire lasts about 6 years. In 1945 his company covered 70,000 tons of flax straw, some of which was stacked in loose form, at an average cost of 68 cents per ton, distributed as follows: labor, 17.7 cents; handling materials for covering, 22.2 cents; material cost, 28.1 cents. Although this type of preservation is quite costly, the expense is much less than the losses which occur in uncovered ricks.

The economics of covering ricks with tarpaulins was deemed unfavorable owing to high initial costs, damage by high winds, soaking through by steady rains, and high labor costs of covering. Copper-8-quinonephenate was mentioned as an excellent preservative for tarpaulins. Dr. Lathrop mentioned that the Celotex Corporation uses interlocking galvanized-iron sheets sprayed with asphalt, covering 12,000-ton ricks of 60 by 100 feet. The estimated life of these sheets, which are sprayed with asphalt each year, is said to be 15 years. In reply to a question as to the probable market for preservatives for straw stored in ricks, it was pointed out that from 1,000 to 1,500 ricks are put up in the mill yards each year.

A discussion was held on the possibility of stacking the upper tier of bales in such manner that the space between bales in the second tier would be completely covered by the solid portion of the bales of the top tier. The opinion seemed to be, however, that this would be impractical because of the inexperienced labor generally used for stacking straw and of the relatively short time period available for this purpose.

Preservative Chemicals

The following chemicals were discussed as possibilities for large-scale preservation tests:

Sodium pentachlorphenate (2 different solid forms), 19 cents per pound, recommended dosage 1 pound per 7 square feet. This figures out to be 21.6 pounds or $4.10 per ton, or $82 for the 20 tons of the top tier.

Pyridyl mercuric acetate or chloride, $7.50 per pound. These chemicals can be used at much lower concentrations than the pentachlorphenate.

A very light-colored penetrating creosote, 80 cents per gallon of 6.8 pounds, which can be diluted with Stoddard solvent.

A 10% emulsion of phenyl mercury oleate in water, 70 cents per pound.

A combination of phenyl type organomercurials and chlorinated phenols, 48 cents per pound.

Boric acid or borax.

Since the effect of dosage of these various chemicals, with the exception of the pentachlorpenate, is not known, it was decided that the best method of conducting the preserevation experiments would be to place them all on a cost basis. The chemicals will be used at two concentrations each, one amounting to $100 and the other to $60, on the basis of a standard rick (approximately 50 to 65 feet, totalling 3,250 square feet across the top, and containing from 500 to 520 bales.)

Proposed Evaluation Procedure

It was suggested that the bales used for these tests be tight bales. Care should be taken that the bales placed on top of the rick should be fairly dry and as uniform as possible. Since some of the strawboard mills use slightly different types of stacking in the rick this should be continued for this tests as a source of additional information on the effect of stacking.

It was also suggested that it would be desirable to weigh in the bales for the top three tiers of the experimental test ricks, and to determine the average moisture content of the baled straw at the time. At the end of the test or when the rick is torn down, these particular bales should again be weighed and their moisture content determined. The Delmhorst moisture detector appears to be reasonably accurate for obtaining the moisture content of baled straw. Weighing these bales in and out will be a somewhat expensive procedure as regards labor costs, but it appears highly desirable from the standpoint of obtaining valuable quantitative information in addition to the qualitative data which will be obtained by visual observation.

If several rotaries of straw, of the same type and condition as used to form the tops of these test ricks, could be cooked at about the time the ricks are put up, the data on the cooking and papermaking characteristics of this straw would be obtained. At the end of the test period or when the ricks are torn down, the top tiers of bales, tier by tier, would again be cooked and similar observations made. In this way the effects of the various preservatives on the characteristics of the straw pulps may be determined. The opinion of this group was that the presence of the relatively small amount of preservative necessary to reduce or prevent decay in the straw would have little effect in controlling slime in the strawboard mill.

The methods of applying these preservatives will be given in detail by the several chemical manufacturers. Each manufacturer will send a detailed outline of the preferred method of application, to the mills cooperating in these tests, as early as possible. Each manufacturer will also have a representative present at the mills to supervise the preservation treatments and will furnish the representative's name and address to these mills.

With regard to liquid preservatives or solutions, emulsions, or dispersions, it was decided that a minimum volume of 1 part per bale was to be used. Some discussion was held on spraying and it was pointed out that it would be desirable to have a

spray that would not fog too much or be injurious to the persons operating the sprayer. It was suggested that a nozzle giving a fan-shape spray and held close to the surface of the bales might give the best results. The River Raisin Paper Company and the Northern Regional Research Laboratory will try to obtain as much information as possible on such spray nozzles. However, the final decision of the type of application of these preservatives will rest with the preservative manufacturer.

The Northern Regional Research Laboratory will cooperate fully with any mills where these tests are to be made and will carry out some of the necessary laboratory work in connection with these tests.

A fine cooperative spirit was shown by all present at this meeting and the consensus of opinion was that considerable headway has been made on this project. Dr. Aronovsky will write to all strawboard mills not represented at this meeting and invite them to cooperate in these tests. It is hoped that it will be possible to start these tests in most of the strawboard mills this coming summer on the 1947 crop of wheat straw.

Attendance

Blandin, H. M. Technical Director, Central Fibre Products Co., Quincy, Ill. Boyce, E. G., Technical Service Representative, E. I. du Pont de Nemours and Co., Wilmington, Del. Broholm, Robert E., Research Chemist, Mallinckrodt Chemical Works, St. Louis, Mo. Buckman, S. J. President, Buckman Laboratories, Inc., Memphis, Tenn. Fleming, John D., Sales Engineer, Monsanto Chemical Co., St. Louis, Mo. Gannon, T. G., Manager, Chicago Branch, Reilly Tar & Chemical Corp., Chicago, Ill. Knack, M. F., Chief Chemist, River Raisin Paper Co., Monroe, Mich. Lyon, Harold, Strawbuyer, Terre Haute Paper Co., Terre Haute, Ind. Olson, Erwin A., Manager, Flax-Fibre Division, Archer-Daniels-Midland Co., Minneapolis, Minn. Nylen, B. C. Specialty Products, E. I. du Pont de Nemours and Co., Wilmington, Del. Smith, Hillard L., Sales Engineer, The Dow Chemical Co., Midland, Mich. Stahl, B. Franklin, Chief Chemist, Terre Haute Paper Co., Terre Haute, Ind.

Northern Regional Research Laboratory

Aronovsky, S. I., In Charge, Pulp and Paper Section, Agricultural Residues Division. Hilbert, G. E. Director. Lathrop, E. C., Head Agricultural Residues Division. Naffziger, T. R., Chemical Engineer, Plastics and Building Materials Section, Agriculture Residues Division. Nelson, G. H., Chemical Engineer, Pulp and Paper Section, Agricultural Residues Division. Raper, K. B., In Charge, Culture Collection Section, Fermentation Division. Roethe, H. E., Technical Assistant to the Director. Shollenberger, J. H., Head, Commodity Development Division. Sutcliffe, H. M., Chemist, Pulp and Paper Section, Agricultural Residues Division. Williamson, R. V., In Charge, Plastics and Building Materials Section, Agricultural Residues Division.

Waste Utilization Discussed at Western New York TAPPI Group Meeting

The Western New York Group of the Empire State Section of TAPPI met Wednesday night, May 14, 1947 at the Prospect House in Niagara Falls, N. Y. Over one hundred were present to hear George H. Tomlinson II and A. E. H. Fair of the Howard Smith Paper Mills, Limited, discuss the utilization of otherwise waste products of the pulp and paper industry.

Mr. Tomlinson divided waste utilization into three classifications: waste from another industry (rags, waste paper) that is processed and sold by the paper mill in its normal routine of business, waste derived from processing that is marketed apart from the ordinary merchandizing of the concern (tall oil, vanillin), and waste from processing that is returned to the pulp and/or papermaking process (salt cake fumes, heat). He emphasized that regardless of the classification, successful utilization is obtained only when the money derived from ultimate sales or use exceeds the initial cost of the waste and the charges incurred in reclaiming it. He then gave examples based on the developments made by his concern such as their use of caustic soda derived from the manufacture of chlorine, the preparation of vanillin from sulphite waste liquor, the development of the magnesium base pulping process, and the manufacture of plastics from lignin.

Mr. Tomlinson in outlining these developments indicated that the solution of one problem sometimes created new problems and emphasized that considerable expenditures of time, personnel, and funds were often necessary to reach successful conclusions and that in the final analysis, success is measured in the economic gains to the company.

In giving managements views, Mr. Fair stated that there must be complete cooperation between the research laboratory and the operating departments for conversion of pilot plant data to commercial operation. At times this entails considerable patience on the part of the mill operators who must recognize that the installation of a mill scale process requires considerably more experimentation in addition to the work carried on in the laboratory.

TAPPI Notes

Henry J. Driscoll is now plant manager of the Scutan Division, Union Bag & Paper Corporation, Hudson Falls, N. Y.

Hugo Klein is now vice president for production and research for Converted Rice, Inc., Houston, Texas.

John O. Younger, formerly of Stein, Hall & Company, is now with the Munising Paper Company, Munising, Mich.

H. M. Hunter has replaced Chester M. Knowles as official representative of the Process Equipment Division, General American Transportation Company, 10 East 49th Street, New York, N. Y., in the Technical Association of the Pulp and Paper Industry.

Oscar de Sylva has succeeded C. A. Southwick, Jr., as corporate representative of Shellmar Products Corporation, Mt. Vernon, Ohio, in TAPPI.

William Y. Chatterton has succeeded E. N. Walters as official representative of E. J. Cady & Company in TAPPI.

Harry G. Shapiro, patent counsel for the Marathon Corporation, is now associated with Joseph Rossman at 1820 Jefferson Place, N. W., Washington 6, D. C.

Grant F. Davis, formerly of Hollingsworth & Whitney, is now assistant chemical engineer in the Research Development Department, Mathieson Alkali Works, Inc., Niagara Falls, N. Y.

Chlorite Bleaching of Southern Pine Kraft Pulp*

By W. P. Lawrence[1]

Abstract

Sodium chlorite was investigated as a finishing bleach for raising southern pine kraft pulp from G. E. brightness 60-70 to 80-84. With a given initial brightness, predried pulp yielded a few points higher ultimate brightness than slush pulp. Alkaline (hypochlorite activated) chlorite under proper control gave results about equal to those obtained with acid activated chlorite. Alkaline chlorite consequently was employed because of its greater adaptability to existing mill equipment. Both types of chlorite were materially superior to hypochlorite in preserving strength characteristics of the pulp, but not in degree of ultimate brightness attained. Of the several process variables investigated, pH and ratio of hypochlorite to chlorite appeared to be the most important in alkaline chlorite bleaching. Alkaline chlorite bleaching of predried pine kraft pulp in beaters on mill scale was carried out over an extended period of time, with generally satisfactory results.

Shortly after sodium chlorite was made available on commercial scale by the Mathieson Alkali Works, laboratory investigations were made of its applicability to southern pine kraft pulp. Because of the relatively high cost of sodium chlorite, its utilization was limited in scope to a finishing bleach treatment of pulp previously bleached to G. E. brightness 60 to 70 by conventional methods. The objective sought was a pine kraft pulp of G. E. brightness 80 to 84, with a substantial retention of strength properties of the original pulp. The experimental investigations pointed the way to a somewhat specialized mill application, which was successfully followed on mill scale for a rather extended period of time.

Bleaching of Slush and Pr dried Pulp

In the course of these investigations, a number of process variables were studied, with results as noted herein. At the outset, a distinct difference was noted in the bleaching characteristics of undried, slush pulp as compared to pulp which previously had been machine dried. Using comparable amounts of available chlorine in various types of chlorite bleaches, undried pulp of about 60 brightness was carried to 76 to 78 brightness with chlorite, whereas predried pulp of 60 brightness bleached to 80 to 81 brightness. Again, undried pulp of 72 brightness yielded 82 to 83 brightness, whereas predried pulp of 72 brightness yielded 84 to 86 brightness, in parallel laboratory bleaches with chlorite. While the numerical difference is small, it obviously is of great importance in the range of high brightness. The circumstances of subsequent mill applications were such that most of the experimental studies were limited to machine dried pulp, and application of this finishing bleach to machine dried pulp was made the subject of a patent application. The greater response of predried pulp to a bleaching agent is not peculiar to chlorite, but applies also to hypochlorite. It is theorized that drying shrinks the fiber and at the same time concentrates coloring substances near the surface of the fiber, so that subsequent bleaching reactions proceed more actively and efficiently.

Acid vs. Hypochlorite Activation of Chlorite

It has been pointed out in the literature *(1,2)* that sodium chlorite as such is relatively inert, but may be "activated," whereupon chlorine dioxide is liberated. This "activation" may be brought about readily by one of three agents, namely, acid, hypochlorite ion in alkaline medium, and chlorine. The first two of these three were deemed most suitable for pulp bleaching applications, and laboratory comparisons of the acid and hypochlorite types of activation were made on several occasions. The acid type of activation appeared to give the most consistently good results, but alkaline hypochlorite activation under proper conditions nevertheless gave quite favorable results. Table I gives the results of one set of parallel experiments which demonstrates this point.

TABLE I.—COMPARISON OF BLEACHING AGENTS APPLIED IN LABORATORY TO PREDRIED PINE KRAFT PULP

Type of bleaching agent	None; Control	Calcium Hypochlorite	Acid Activated Chlorite	Hypochlorite Activated Chlorite
Pulp consistency, % moisture free	...	4.0	5.0	5.0
Temperature, °F.	...	110	150	110
Duration, hours	...	5.8	4.0	2.0
Average pH	...	8.0	3.9	8.5
Available chlorine applied				
Total, %	...	2.0	0.5	1.5
As sodium chlorite, %	...	...	0.5	0.5
As calcium hypochlorite, %	...	2.0	...	1.0
Total chlorine consumed, %	...	1.60	0.46	1.18
G. E. brightness values				
Before bleaching	68.4	68.4	68.4	68.4
After bleaching	...	84.9	83.9	83.8
After ageing	61.6	73.9	75.1	73.6
Loss on ageing	6.8	11.0	8.8	10.2
Physical tests on pulps				
Bursting strength, average	176	165	173	176
Bursting strength, maximum	250	208	250	255
Tear, average	613	428	540	543
Tear, maximum	920	625	725	910

Ageing consisted of maintaining samples in 220° F. oven for 15 hours. Physical tests were obtained by ball mill development, tests being made at 65% R. H., and reported as percentage values per pound per 17 × 22 — 500 ream.

The results summarized in Table I illustrate the general findings that chlorite did not produce a higher ultimate brightness than hypochlorite, but did prove to be very effective in conserving pulp strength upon bleaching to high brightness. The brightness of chlorite bleached pulps as a general rule was more resistant to ageing, as indicated in Table I. In this particular set of experiments, little difference was noted between chlorite and hypochlorite in the effect upon alpha-cellulose content, opacity, and hydration characteristics of the fully bleached pulps.

In view of the favorable results obtained with alkaline chlorite, and the advantage it afforded in simplicity of application to existing equipment from the standpoint of corrosion, subsequent experimental studies were further limited to alkaline chlorite bleaching of previously dried kraft pulp.

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 24-27, 1947.

[1] Member TAPPI; Research Engineer, The Champion Paper & Fibre Co., Canton, N. C.

Miscellaneous Bleaching Variables

The established, preferred technique of alkaline chlorite bleaching is to add first the desired amount of chlorite, equivalent to perhaps 0.5% available chlorine, basis pulp. After this is thoroughly mixed, and temperature and pH have been adjusted while the chlorite is still inert, calcium or sodium hypochlorite then is added, in amount perhaps equivalent to 1.0% available chlorine, basis pulp, making a total of 1.5% available chlorine. The bleaching action begins immediately upon the addition of hypochlorite, and is carried out for about 2 hours in the neighborhood of 5% consistency, 110°F., and pH 8.5 to 9.

In a study of the time factor, it was found that the brightness gain was very rapid at the outset, and then levelled off. In one instance, the brightness after 1.5 hours was 80.0, while at 3 hours it was 83.0. In the pH range mentioned, higher alkalinity produced slightly better brightness, as for example brightness 81.0 at pH 9.0 vs. brightness 80.6 at pH 8.0.

The chlorite bleaching reaction seemed relatively immune to extraneous materials which have a significant effect on some bleaching reactions. The addition of soluble iron to the extent of 100 p.p.m., basis pulp, decreased the ultimate brightness about 1 point, but failed to affect materially the rate of consumption of chlorite. The addition of a substantial amount of sodium peroxide had no effect on the rate of chlorite consumption nor on the ultimate brightness.

Effect of Hypochlorite: Chlorite Ratio, pH, and Consistency

The preservation of pulp strength characteristics on bleaching with chlorite has been attributed to its lower oxidation potential. This characteristic is supposed to hold true even when hypochlorite is present as an activating agent, because the hypochlorite in theory reacts with the chlorite to form chlorine dioxide, in preference to reacting with and oxidizing the cellulose. In order to fulfill this condition, it obviously is important to have the chlorite and hypochlorite consumed at approximately the same rate, and in particular to avoid conditions whereby the chlorite would be consumed first and leave the pulp exposed to the action of excess hypochlorite with its higher oxidation potential.

It was found that the simultaneous rates of consumption of the two bleaching agents were affected by the proportion or ratio in which they were added, and by pH. At pH 8.5, this desired, parallel consumption was obtained at a hypochlorite:chlorite ratio of something less than 2:1, and approaching 1:1. The ratios mentioned are in terms of available chlorine equivalents. At pH 9.5, the reaction proceeded best at a straight 2:1 ratio of hypochlorite:chlorite. Under certain conditions, such as 1:1 ratio of the bleaching agents at pH 9.5, practically no chlorite was consumed, and the bleaching action in this instance was essentially that of a straight hypochlorite bleach.

The importance of pH in alkaline chlorite bleaching had been recognized previously, and intermittent additions of caustic soda were made in practically all bleaching work to maintain the pH in the desired range. While this achieved the result desired, it was not particularly satisfactory from the standpoint of operating control. A number of buffers were tried with the object of maintaining the pH at a more constant level. These included sodium silicate, trisodium phosphate, sodium bicarbonate, borax, and sodium carbonate. Those buffers which provided satisfactory pH control were required in such large quantities that, all things considered, caustic soda appeared to be the best agent for pH control.

TABLE II.—EXAMPLES OF ALKALINE (HYPOCHLORITE ACTIVATED) CHLORITE BLEACHING OF PREDRIED PINE KRAFT PULP IN MILL BEATERS

Description of pulp	Original Pulp A	Bleached Pulp A	Original Pulp B	Bleached Pulp B
Bleaching temperature, °F.	...	118	...	115
Duration, hours	...	2.5	...	3.0
Average pH	...	8.6	...	8.5
Available chlorine applied				
Total, %	..	1.5	...	1.5
As sodium chlorite, %	...	0.5	...	0.5
As calcium hypochlorite, %	...	1.0	...	1.0
Total chlorine consumed, %	...	1.26	...	1.38
G. E. brightness values				
Before bleaching	71.7	71.7	68.5	68.5
After bleaching	...	83.3	...	81.4
Physical tests on pulps				
Bursting strength, average	159	154	161	158
Bursting strength, maximum	228	205	224	205
Tear, average	656	618	641	565
Tear, maximum	865	875	895	745

Alkaline chlorite bleaches were carried out for the most part at 5% pulp consistency. Parallel experiments indicated that bleaching at 3% consistency gave equal brightness values after 2 hours, gave approximately equal strength retention, and tended to retard the consumption of chlorite, and thereby to minimize the danger of exposing the pulp to the action of hypochlorite alone.

Mill Trials

An opportunity for applying alkaline chlorite as a finishing bleach was presented at our Hamilton, Ohio, mill. This is a paper mill only and receives its supply of pulp from outside sources, chiefly in the form of machine dried southern pine kraft from the pulp mills. By bleaching this pulp with chlorite at Hamilton, it was postulated that a pulp of 80 to 83 brightness could be produced from southern pine with strength characteristics comparable to those of more expensive pulps from outside sources.

This premise was borne out in a general way in mill trials, and resulted in a rather extended usage of sodium chlorite as a finishing bleaching under these conditions. The types of pulp processed and the equipment and techniques employed were subject to considerable variation, so that a coherent summary of these operations would not be feasible. An example will suffice to illustrate the general procedure followed and the results obtained.

As a matter of convenience, preliminary trials were carried out in a wooden beater with steel tackle, and this proved to be generally satisfactory for this particular bleaching operation. The procedure was to charge the beater with 2,150 pounds air dry (1,940 pounds moisture-free) pulp of 70 to 72 brightness, which previously had been machine dried at the pulp mill. After the beater charge was thoroughly slushed, at about 5% consistency, commercial sodium chlorite equivalent to 9.7 pounds or 0.5% available chlorine was added and distributed well, in the solid form. Several minutes were allowed for circulation in the beater to insure good distribution. Meantime, direct steam was added to bring the charge to 110 to 115°F. There was no bleaching action during this period since unactivated chlorite is relatively inert. Next, commercial calcium hypochlorite equivalent to 19.4 pounds or 1.0% available chlorine was added slowly in solution form. Bleaching action was apparent immediately upon addition of the hypochlorite.

The charge was circulated in the beater with the roll well off the bedplate for 2 to 3 hours. During the bleaching cycle mentioned, approximately 5 pounds of caustic soda were added to keep the charge in the neighborhood of pH 8.5. After bleaching, the stock was wet lapped or vacuum washed, and used

in the paper mill. Typical summaries of the range of results of bleaching in this manner are presented in Table II. Moderate losses of strength characteristics were experienced in some instances, but the general results in this respect were rather satisfactory. Brightness values in the range of 80 to 83 were obtained consistently.

Conclusions

Alkaline chlorite was found to give very satisfactory results in specialized applications as a finishing bleach for raising southern pine kraft pulp to G. E. brightness 80 to 83, with good retention of strength characteristics. The degree of brightness obtained was materially better in the case of pulp which previously had been dried. Investigation of the various bleaching variables indicated that pH and ratio of hypochlorite to chlorite were the most important factors in alkaline chlorite bleaching.

Acknowledgment

Acknowledgement is made to the technical service staff of Mathiesen Alkali Works for their cooperation and numerous suggestions in the course of these studies.

Literature Cited

1. Taylor, M. C., White, J. F., Vincent, G. P., and Cunningham, G. L., *Ind. Eng. Chem.* 32, No. 7: 899-903 (July, 1940).
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Kalamazoo Valley TAPPI Discusses Pumps

Approximately eighty people attended the Kalamazoo Valley TAPPI Engineering Meeting held at the Columbia Hotel May 8th, Robert Mashburn presided over the meeting and introduced R. G. MacDonald, National Secretary of TAPPI, who paid the local section a surprise visit. Mr. Macdonald discussed briefly the Association's plans for fall meetings which this year are to be held in seven different cities of the United States. Mr. Macdonald also commented on the activities of the various TAPPI Sections which, to him, are progressing satisfactorily along the lines he had desired.

Paul Bartholomew, Secretary of the Kalamazoo Section of TAPPI, then introduced A. D. Ross, newly appointed Chief Engineer for the Towgood & Sons Paper Company, Cambridge, England. Mr. Ross, who at present is on a paper mill inspection tour of the United States, was formerly associated with the Titaghur Paper Company, Ltd. of Calcutta, India.

The main speaker of the evening was Mr. George V. Shaw, Chief Engineer of the Cameron Pump Division of Ingersoll Rand Company, New York and Co-editor of the Cameron Hydraulics Data Book. Mr. Shaw was introduced by Mr. William Hathaway, Program Chairman for the evening.

Mr. Shaw's talk consisted of a detail description of various centrifugal pumps used in the paper industry, along with proper white water and stock pumps showing what construction features were desirable and what characteristics were most suitable for this type of work. He told of different difficulties encountered by pump manufacturers and their solution during the early attempts at using centrifugal pumps for this work. In the case of the white water pumps, special slots had to be put on the outside of the empellors and rings to clean out fibrous accumulations between the rings. In the case of the stock pumps, auxiliary impellors had to be installed at the suction end to take care of varying capacity created by fluctuating suction head. Also, the stock pumps were made both horizontal and vertical to work no matter where the necessity required.

Mr. Shaw also discussed pumps used for handling corrosive liquids and pumps for use in the Power Plant. He pointed out what troubles and losses would result from incorrect calculations of pipe friction losses and improper provisions for head at the suction end—the latter point being more critical for stock pumps. He also showed how important it was to buy a pump which would be reliable and have a low maintenance cost rather than be overly concerned with high initial costs.

A question period followed the talk during which time attention was called to the fine exhibit of pumps collected by the Committee in charge of the program. Some of the audience considered the material presented by Mr. Shaw to be extremely valuable and expressed a desire for copies of the talk. This is being arranged by the officers of the Kalamazoo Section of TAPPI and copies will be forwarded as soon as they are available.

Among those attending were: Ralph Atkins, D. D. Bachelder, P. W. Bartholomew, C. D. Beebe, A. F. Bieglow, C. H. Billington, Preston D. Carter, A. W. Cole, C. T. Colgren, J. L. Clouse, M. G. Daniels, J. A. Dean, H. C. Dickhant, D. Disbrow, John Dom, D. R. Erickson, H. S. Faram, T. A. Finch, D. C. Fleck, J. H. Fritz, C. E. Gardner, Clarence T. Gebhart, C. J. Geng, G. D. Gerpheide, K. L. Graf, Art Griffith, Paul A. Harlamert, W. F. Hathaway, John A. Heenan, Joseph Hartman, H. W. Hartman, Fred M. Hodgemire, Morris W. Kane, Joseph Klein, Stephen Kirkolich, Lester H. LaLiberte, A. T. Luey, R. G. Macdonald, R. T. Mashburn, Bob Meek, L. Mimms, H. Merkle, D. H. Militzer, H. Nendorf, Charles H. Olmstead, A. A. Parcels, Howard Parker, C. J. Pearson, Henry Reeves, Jr., A. Wm. Reidel, H. A. Ronningen, Edward M. Root,* A. D. Ross, Marshall Rutz, Frank A. Root,* L. J. Schied, Geo. V. Shaw, Al Sherwood, Lyall Stafford, C. C. Schneider, Homer St. Clair, J. Sisson, E. B. Spreen, A. F. Stolle, Chester N. Strepp, W. R. Tobin, R. T. Trelfa, H. G. Ware, M. P. Wingate, James A. Wise, A. E. Woollam, E. R. Zaut.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership.

James A. Adams, Technician, Restigouche Co., Ltd., Campbelton, N. B., Canada.

Philip S. Barnhart, Technical Director, Westfield River Paper Co., Russell, Massachusetts, a 1920 graduate of Pennsylvania State College.

Clayton A. Boehle, Design Engineer, Continental Paper Co., Ridgefield Park, New Jersey. Attended Georgia School of Technology and Curtiss Wright Technical School.

John W. Crocker, Supervisor of Engineering, The Sandy Hill Iron & Brass Works, Hudson Falls, New York, a 1937 graduate of Heriot-Watt College, Edinburgh University.

Richard M. Elias, Student, The Institute of Paper Chemistry, Appleton, Wisconsin, a 1943 graduate of Lawrence College.

Albert S. O'Brien, Chemist, Eastman Kodak Company, Rochester, New York, a 1938 graduate of the University of Minnesota with a Ph.D. degree.

Scandinavian Research Organizations*

By Edwin C. Jahn[1]

Abstract

The greatest natural resource of the so-called "Nordiska Länder," or northern countries, is timber. The pulp and paper industry of this region is the area's greatest industry in terms of capital investment, value of products, and export business. Another resource which holds Scandinavian industry at its high level is technical skill, both of the workers (for precision work and individual responsibility) and of the engineers and research men.

These three facts together make a survey of Scandinavian research organizations of particular interest to the technical men of the American pulp and paper industry. In each of the three important pulp and paper producing Scandinavian countries, i.e., Sweden, Finland and Norway, there is close coordination between the different types of research institutions such as universities and technical colleges, government institutions, and industrial laboratories. These research efforts are interwoven in a national pattern for the common good in a number of different ways, such as through scientific academies aided by the government and through research development associations organized by industry.

Research in pulp and paper in all three countries is promoted by the industry as a whole as well as by individual companies and by the universities and government laboratories. In each country the industry maintains a central research laboratory. Furthermore, a number of individual companies have recently built large well-equipped private reseach laboratories. This is a recent development and other companies are making similar plans.

In Sweden the pulp and paper, wallboard, and plywood industries and the government have cooperated in organizing and building in Stockholm a fine modern forest products laboratory. The buildings for this institute cost well over 1 million dollars and house excellent fundamental research laboratories for cellulose, paper, and wood and also complete pilot plants for pulp, paper, and wallboard, including a paper machine.

Scandinavian[2] research institutions are of considerable interest to technical men in the American pulp and paper industry because of the important place that pulp and paper problems occupy in the organization and planning of Scandinavian research. It is, of course, only natural that cellulose and paper technology hold a high position in the research thinking of Sweden, Finland, and Norway, since wood is the greatest natural resource of this region, and the manufacture of pulp and paper is the largest industry of the "Nordiska länder," or so-called northern countries.

Furthermore, the Scandinavian countries are quite technical- and engineering-minded. This is evident in a number of things such as (1) the high aptitude of the workers for precision work and their strong sense of individual responsibility, (2) the inherent liking for technical work on the part of the engineers, coupled with a good fundamental training, and (3) the widespread acceptance of trained engineers in the operation and administration of industrial plants.

Research institutions in these countries, as in any modern industrial country, fall into three groups, namely, industrial, educational, and government. However, the machinery set up to coordinate research in Norway, Finland and Sweden is especially interesting. No attempt is made here to list and describe all research institutions in these three great European pulp producing countries. Particular mention, however, will be made of organizations doing research on wood, cellulose and pulp and paper.

Educational Institutions

Institutions of higher learning in these countries fall into three groups: (1) the universities, (2) the technical or engineering colleges, and (3) other professional colleges such as for agriculture, forestry, medicine, pharmacology, veterinary sciences, dentistry, etc.

There are six universities in the three countries under discussion. At some of them special research institutes have been built up, usually as the result of the outstanding work of a professor and his staff. One of the most famous is the Institute of Physical Chemistry under the direction of Professor The Svedberg at Uppsala University. Here the ultra-centrifuge was developed and a great deal of important work on the physical chemistry of cellulose and cellulose derivatives has been and is being pursued. Many useful scientific tools have been developed at this institute including, besides the ultra-centrifuge, the Claesson adsorption analyzer for quantitatively separating closely related chemical compounds. the Tiselius electrophoresis apparatus, an osmotic balance, and others.

There are four engineering colleges or institutes of technology in these countries. Three of these, the Helsinki Technical Institute, the Swedish Royal Technical Institute at Stockholm, and the Norwegian Technical College at Tronheim have professors of cellulose chemistry and paper technology. The Helsinki Technical Institute maintains its own cellulose research laboratories under the direction of Professor R. H. Roshchier, as well as pulp and paper laboratories for student instruction (Professor H. Pellinen).

The Professor of Cellulose Chemistry at the Swedish Royal Institute of Technology, Professor Erik Hägglund, is director of the industrially supported cellulose laboratory affiliated with that institute. This laboratory is now merged with the new Swedish Wood Research Institute which will be described later.

Government Laboratories

Each of the three governments maintains a number of research institutions. In Sweden these include a testing laboratory (standards) and institutes for re-

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[1] Member TAPPI; Professor of Forestry Chemistry, New York State College of Forestry at Syracuse University, Syracuse, N. Y.

[2] In this paper the term "Scandinavian Countries" is not used in its normal meaning but includes the forested pulp producing countries of Norway, Sweden, and Finland. Finland is, strictly speaking, not a Scandinavian country although geographically, culturally and economically it is closely related. Denmark is not discussed in this paper since it produces no pulp.

FIG. 1
Forestry College at Stockholm

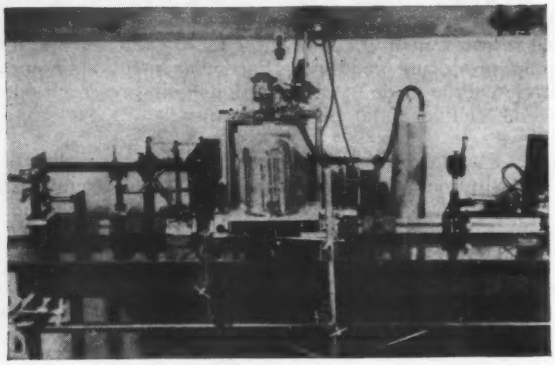


FIG. 2
Claesson Adsorption Analyzer at Uppsala University

FIG. 3
Swedish Royal Institute of Technology

search in aerodynamics geotechnics, roads, cement and concrete, public health, hydrodynamics (ship testing), veterinary bacteriology, hydrology and meteorology, agriculture, and forestry.

In Helsinki the Finnish government has a modern well-equipped industrial research laboratory which is loosely affiliated with the technical institute, so that students from the institute may work in the state laboratory. This laboratory carries on development research and testing for a variety of industries. The state laboratory has such diversified facilities as a metallurgy laboratory, x-ray room, ore separation laboratory, machine shop, food chemistry laboratories, wood working, veneer and plywood machinery, a complete small sawmill, etc.

Academies

Every advanced country has its scientific and learned academies and the Scandinavian countries are no exception. One of the points of particular interest about the two principal Swedish academies is that they also operate research laboratories. The Royal Academy of Science has created an Institute of Experimental Physics with grants from the Nobel Foundation. This institute is working on atomic physics and radiation phenomena and has such tools as two cyclotrons (one being built), electron microscope, high-vacuum pumps, x-ray spectro-photometers, etc. This institute is under the direction of Professor Manne Siegbahn. The Royal Academy of Science also has founded laboratories for theoretical physics, chemistry, astronomy, and zoology.

The Royal Swedish Academy of Engineering Sciences, besides being a learned society in the field of engineering and technology, also serves as a central clearing house for engineering research and conducts research of its own, mainly in the field of fuel and heat economy. The organization plan of this academy is shown in Fig. 5.

The Fuel Research Station was built in 1943 by the State and placed at the free disposal of the engineering academy for a period of 10 years. Space and equipment in this laboratory is made available to various industrial groups.

The engineering academy serves as a catalyst for the development of research ideas and attempts to coordinate Swedish research. During the war it started a research preparedness association, which is continuing as The Researchers' Contact Organization—or FKO. The FKO consists of about 275 liaison men, each from a different institution, committee, or laboratory. This provides a very quick method of gathering and coordinating information. The working scheme of this organization is shown in Fig. 7.

Industrial Laboratories

Laboratories directly owned and operated by industry fall into two classes: (1) those operated by an industry as a group and (2) those operated by individual companies. In Norway, Finland, and Sweden, the pulp and paper industry maintains central research laboratories. These laboratories are maintained and operated by the industry as a whole through its association in each country. The purpose of these laboratories is to carry on scientific and technical research for the benefit of the industry of the country as a whole, to serve as a center for the discussion of technical problems, to advise the industry on technical matters, and to determine standards of control and analysis.

In Norway, The Paper Association, The Pulp Association, and The Groundwood Association jointly organized and built a laboratory in 1923 near Oslo which is called The Paper Industry's Research Institute. This institute carries on both fundamental and technical research on cellulose, cooking, bleaching, pulp byproducts, grinding, and paper properties. The director of the Institute is Dr. Sigurd Samuelsen. An historical account of this institute and its work and present program is described in the first issue this year of the new journal *Norsk Skogsindustri* with which is combined the former *Papir-Journalen*.

The Norwegian paper industry is also actively supporting research in forestry. Just recently the paper

manufacturers through their association gave 100,000 crowns (about 22,000 dollars) to the Norwegian Forest Research Institute to enable them to expand their greenhouses, laboratories, and other facilities.

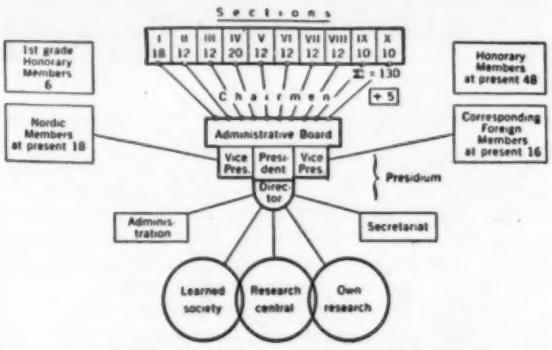
In Finland, the Finnish Pulp Association maintains a laboratory in Helsinki known as The Central Laboratory of the Finnish Pulp Industry. This laboratory occupies a rather large building with a good-sized staff under the direction of Dr. Bertil Nybergh and is occupied with scientific and technical problems of cellulose, pulping, pulp purification, rayon, byproducts, etc. The laboratory also carries on control work and issues the Finnish standard testing procedures.

In Sweden, the Swedish Pulp Association also maintains a similar laboratory known as The Central Laboratory of the Swedish Pulp Association. Unlike the sister laboratories in Norway and Finland, this laboratory is loosely affiliated with an engineering college, The Royal Institute of Technology. The director of the laboratory also holds a post as professor at the institute. The laboratory was built in 1930 and Professor Erik Hägglund is the director. Recently this laboratory has been placed in a new organization, the Swedish Wood Research Institute, which will be described later.

Besides these central laboratories maintained by an industry as a whole, there are a number of excellent industrial laboratories operated by individual companies. Many of these have been built during the war years and the expansion of industrial research has been remarkably rapid during the past eight years. Among these new laboratories are the metallurgical laboratory and the organic products laboratory of the Bofors Company, the pharmaceutical laboratory of the Astra Company, the chemical and metallurgical laboratories of the Boliden Co., the electrical laboratories of the Swedish Electric Company, the electric communication and electronics laboratories of the L. M. Ericsson Company, and several pulp and paper laboratories.

Among the latter are the research laboratories of Stora Kopparbergs Bergslags A.B., of Billeruds A.B., of Uddeholms A.B., of Mo o. Domjö A.B. and of The Swedish Pulp Company. These laboratories are large institutions equipped for broad research programs in the field of cellulose, wood, pulping, cellulose derivatives, chemical byproducts, etc.

The laboratory of the Mo and Domsjö Company at Oorsköldsvik (Fig. 8) is essentially a chemical



Organization and main objects of the IVA.

FIG. 5
Organization of Swedish Royal Engineering Society*

* From Velander (8)

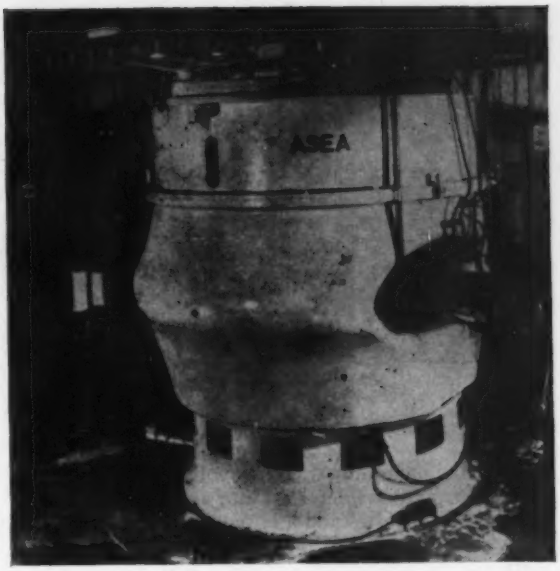


FIG. 4
Cyclotron at Institute of Experimental Physics, Stockholm*

FIG. 6
Fuel Research Station of Swedish Royal Engineering Academy

FIG. 7
The Researchers' Contact Organization*

* From Velander (8)

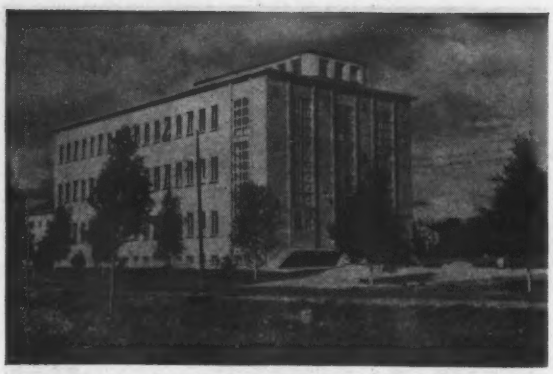


FIG. 8
Research Laboratory of Mo and Domsjo

engineering laboratory having both an open well or pilot plant and smaller laboratory rooms. The building has three stories and a basement. It has developed many of the processes now in operation by the company for the production of acetic acid, glycol derivatives, esters, butanol and other chemical products from sulphite waste liquor. The company is planning another laboratory for research on pulp and cellulose derivatives.

The Stora Kopparbergs Bergslags Company has built a second laboratory at Falun. This new building has three stories and a basement and is designed primarily for research on the building up of an organic chemical industry from wood and pulp by-products. The older building houses the pulping research facilities. The new building has many interesting features. The basement has cold rooms, an autoclave room, storage space, fireproof room, etc. The first floor is devoted to organic synthesis, the second to physical chemistry, optics and physics, and the third to analysis and individual research rooms. There is also a chemical engineering pilot plant.

The Billerud Company completed a new central laboratory in 1944 in Säffle for its mills. It is equipped for research on pulping, bleaching, cellulose derivatives, rayon, etc.

In May 1945 the Swedish Pulp Company formally opened its new research laboratory near Sundsvall. This is a central laboratory for all the mills of the company. It has a basement and three stories as well as space in the attic for a luch room, fan room, water still, etc. The building has about 100 rooms as well as a large engineering well or hall about 75×75 feet and three floors high and having a large balcony working space. The basement contains workshops, storerooms, power room, etc. The first floor is devoted to pulp and paper testing, wood gluing, and wood technology research; the second floor to physical chemical research, pulping, bleaching, and derivatives; the third floor to analysis, biochemistry, and organic synthesis. On the second floor there is also a conference room and library.

Organization for the Promotion of Research

There are a number of state and private industrial organizations for the promotion of research. The state organizations have considerable money at their disposal to grant to various institutions or persons for special research projects. Among such state groups in Sweden are the Agricultural Research Council, the Medical Research Council, the Advisory Board for Fundamental Science, the State Committee for Building Research, and the Technical Research Council.

There are a variety of industrial organizations for the promotion of research. The steel industry, through the Swedish Iron Masters' Association, maintains a Metalographic Institute at the Royal Institute of Technology. The Cement Concern has also established a Cement and Concrete Research Institute at this same engineering college.

Swedish industry as a whole established in 1939 an Institute for Study of Industrial Problems. This organization employs a group of economists and experts who conduct economic research for the advancement of Swedish industry, as well as publish and make available papers of economic value to various industries.

The Swedish chemical industries in 1940 set up an organization known as the Central Organization for Chemical Industry. This is a combined office for the chemical industries to discuss technical and economic subjects and to circulate information to the members.

In Norway, a number of industries combined to form in 1943 the Research Organization for Norwegian Industry. The purpose of this group is to investigate the possibilities of starting new industries in Norway and to determine ways and means of extending and modernizing existing Norwegian industrial activities. The organization also seeks to stimulate industrial research and also plans to take up matters of general interest on its own initiative.

Industry and State Cooperation in Research

As a result of proposals by the Federation of Swedish Industries, the Royal Swedish Engineering

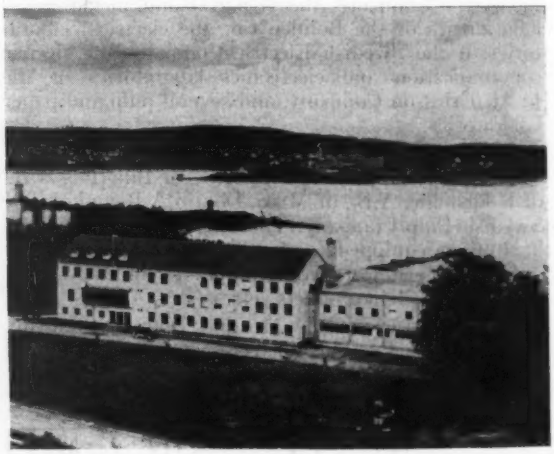


FIG. 9
Research Laboratory of the Swedish Pulp Company

Academy and the Association of Engineers and Architects, the Minister of Commerce in Sweden appointed a committee in 1940 to investigate ways and means for promoting research. This committee published its findings in a series of eight reports, covering the research needs of various industries.

Based on these reports, research institutes have been created for textiles, metals, and wood and a Food Conservation Institute is being considered. In each case the government provides the buildings and the industry provides the equipment. The government provides annual grants for fundamental research and the industry for applied research. The institutes may

take up special work for individual industries if time and equipment permit. The industry pays the cost of such work and the results remain the property of the industry.

The Textile Research Institute was established jointly by the government and the textile and clothing industries in 1943. The laboratory is located at the Chalmers Institute of Technology in Gothenburg and was completed in 1945. This institute is well-equipped not only for applied textile research but for fundamental physical and chemical research on fibers and macromolecules. It has an ultracentrifuge laboratory, electropheresis apparatus, a Claesson adsorption analyzer, and other physical chemical equipment.

The Swedish Wood Research Institute

The Wood Research Institute, which was established as a result of the recommendations of the committee to survey ways and means of promoting cooperative state and industrial research, was started January 1, 1944. The financial arrangement, organization and administration of this Institute is similar to that of the Textile Research Institute.

The functions of the institute are divided into two groups. One of these is termed the Institute for Fundamental Research and the other the Central Laboratories. The former deals with fundamental scientific research concerned with all problems dealing with forest products. The latter are industrial laboratories concerned with problems of industrial development.

Industry and the government share the cost and the management of the institute. The buildings are being built by the state which has furnished 4,245,000 crowns (1 dollar equals about 3.60 crowns) for this purpose. The equipment will be supplied by industry at a calculated cost of 3,165,000 crowns. For the operation of the Institute for Fundamental Research, the state will give annually about 500,000 crowns and the industry about 50,000 crowns. The industry will operate the Central Laboratories at an expected cost of about 600,000 crowns annually.

The heads of the Wood Chemistry, Paper Technology, and Wood Technology Departments will be on the staff of the Technical University. The Wood Research Institute is located adjacent to the Technical University, which is a state university, and is loosely affiliated with it.

Eight industrial associations have joined to support the institute. They are the cellulose, paper, wallboard, groundwood, wood products export, plywood, graphic industry and the wool industries branch associations. Together they have set up the "Swedish Wood Research Foundation."

Fig. 10
Reception Hall of the Swedish Pulp Company's Research Laboratory

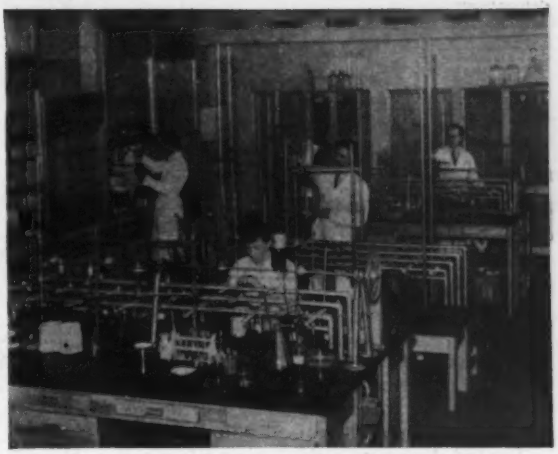


Fig. 11
View in One of the Laboratory Rooms of the Swedish Pulp Company's Research Laboratory

This foundation and the state each appoints five members to the governing board. The state also appoints the chairman after consultation with the industry. The present chairman, Gösta Malm, was formerly director of a hydroelectric concern.

The Central Laboratories will each have a separate board directing its activities for the benefit of the industry sustaining it. At present five central laboratories are organized; for cellulose (chemical pulp), groundwood, paper, wallboard, and graphic arts.

The arrangement of the buildings is shown in Fig. 14, with the exception of the wood technology building which lies adjacent to the chemical buildings, but is not included in the figure.

The main cross-shaped building to the left houses the Wood Chemistry and Paper Technology Departments of the Institute for Fundamental Research, as well as the administrative office. Here are located the fundamental research laboratories for cellulose chemistry, organic synthesis, physical-chemical measurements, analysis, microbiology, and paper technology. Only this part of the institute plus the wood

Fig. 12
Ultracentrifuge Laboratory at the Swedish Textile Research Institute

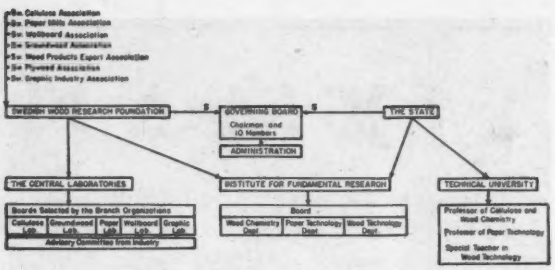


FIG. 13
Organizational Scheme of the Swedish Wood Research Institute

technology building are built at present. The remainder are expected to be completed by 1948.

Buildings 1 and 2 (Fig. 14) will house the central laboratories for the chemical pulp industry. Here will be located digesters, pulp testing laboratories, bleaching equipment, and equipment for research on cellulose derivatives.

Building 3 will house a machine shop and other shops. Building 4 will be the paper industry's pilot plant, and building 5 will house the wallboard and groundwood laboratories. The total utility floor space will be about 82,000 square feet.

The central laboratory for paper (building 4) will contain a paper machine. The machine is built for speeds between 33 and 660 feet per minute when the driers are being run. The wire and presses may be run up to 1,640 feet per minute. The width of the slice is 880 mm. (2.9 feet) and the total length of the wire is about 82 feet. The machine is equipped with suction couch, suction press, and two additional presses, the third press being reversible. The drier section is divided into one group of twelve cylinders, each 4.1 feet in diameter, one Yankee cylinder, 9.2 feet in diameter, and a final group of six cylinders, each 4.1 feet in diameter. A second Yankee cylinder is placed above the third press and has a separate winder.

Stock preparation is performed in two beaters and two Jordans. The wire is combined with cylinder molds for the production of board.

The wallboard laboratory will be equipped with Asplund defibrators, a Haug refiner, an Apmew screen and a screw dewaterer. There will be four stock chests and one white water tank. The board machine will be of the fourdrinier type, 650 mm. (2.13 feet) wide, complete with deckles, suction boxes, multiple presses, and cutter. There will be an air drier for an insulation board and a hot press for hard board.

Groundwood will be made on a laboratory grinder driven by a direct current motor at 400 to 690 r.p.m. The stone is 750 mm. in diameter and 350 mm. wide.

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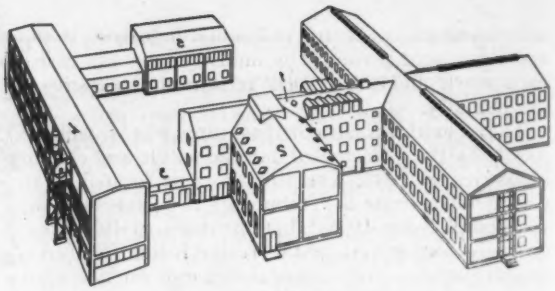

FIG. 14
Buildings of the Swedish Wood Research Institute*

* From Brauns (1)

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TAPPI Asheville Dates Changed

The meeting to be sponsored by the Alkaline Pulp and Chemical Products Committees of the Technical Association of the Pulp and Paper Industry will be held at Asheville, N. C., on October 9, 10 and 11, 1947. (This is a change from the dates recently announced in the TAPPI Bulletin.)

At the same time the Southern and Southeastern Division of the Superintendents Association will meet in Asheville. Although separate meetings will be held for the presentation of papers the mill visits and social events will be held jointly by the two organizations.

The program of the Technical Association will be in charge of K. G. Chesley of the Crossett Lumber Company, Crossett, Ark., and W. P. Lawrence of the Champion Paper & Fibre Company, Canton, N. C. The Superintendents program will be arranged by A. M. Schultz, Camp Manufacturing Company, Franklin, Va., Chairman of the Southeastern Division and James R. Almand, Union Bag & Paper Company, Savannah, Ga., Chairman of the Southern Division.

All requests for hotel reservations should be sent direct to Lee M. Bauer, Ecusta Paper Company, Pisgah Forest, N. C. No reservations will be accepted by the local hotels. Fred V. Doutt of the Champion Paper & Fibre Company is co-chairman of the local committee. A large attendance is expected at these meetings.

Injection Molding of Plastics

The Reinhold Publishing Company has just issued "Injection Molding of Plastics," by Islyn Thomas, president of the Thomas Engineering Company. (534 pp. 6 x 9). This book is for the plant engineer, the product and mold designer, the shop foreman and the plastics technologist. It contains over 500 illustrations including fine color plates most of which deal with the mechanical details of presses, mold design and operating techniques.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y. at $10.00 per copy.